DOCUMENT RESUME

ED 343 206 EA 023 703

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TITLE The Potential Strength of State Curriculum Control Systems: Four Case studies.
INSTITUTION Center for Policy Research in Education.; Wisconsin Center for Education Research, Madison.
SPONS AGENCY National Science Foundation, Washington, D.C.; Office of Educational Research and Improvement (ED), Washington, DC.
PUB DATE Dec 91
CONTRACT OERI-G-0086-90011
NOTE 191p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC08 Plus Postage.
DESCRIPTORS Case Studies; *Curriculum; Curriculum Research; Educational Assessment; *Educational Policy; Educational Testing; Graduation Requirements; High Schools; Information Systems; Media Selection; Public Schools; *State Curriculum Guides; *State School District Relationship; *State Standards; Teacher Certification
IDENTIFIERS California; Florida; New York; Texas

ABSTRACT

Characteristics related to the potential strength of state curriculum control policies in California, Florida, New York, and Texas are described in this report. Each of these states has recently strengthened its influence over the high school curriculum. This report examines the strength of the state policies that: (1) define the high school curriculum; (2) address student graduation course requirements; (3) test student knowledge of the curriculum; (4) address teacher certification and staff development; (5) evaluate the quality of schools; (6) create information management systems bearing on the quality of education; (7) control the selection of educational materials; and (8) press for greater control of the curriculum in other unique ways. State policies are examined in terms of consistency, prescriptiveness, authority, and power. Consistency describes both the internal consistency of a particular policy and the external consistency among different state policies. Prescriptiveness is defined as the specificity and extensiveness of a policy in directing teaching decisions. Authority is based on law, expertise, social norms or support from charismatic individuals, or some combination of these. Power stems from rewards and sanctions. Information contained in the case studies comes from documents provided by each state and interviews with state officials. (9 references) (MLF)

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THE POTENTIAL STRENGTH OF STATE CURRICULUM CONTROL SYSTEMS: FOUR CASE STUDIES

Alexander K. Tyree, Jr.
December, 1991

The research reported in this paper was supported by the Center for Policy Research in Education, which is funded by a grant from the U.S. Department of Education, Office of Educational Research and Improvement (Grant No. OERI-G-0086-90011), the National Science Foundation (NSF), and by the Wisconsin Center for Education Research, School of Education, University of Wisconsin-Madison. The opinions expressed in this publication are those of the author and do not necessarily reflect the views of the U.S. Department of Education, Office of Educational Research and Improvement, the National Science Foundation, the institutional partners of the Center for Policy Research in Education, or the Wisconsin Center for Education Research.

EA 023703

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Acknowledgements

In preparing these case studies I have benefitted from feedback and editing assistance from Andrew Porter, Doug Archbald, Lisa Armstrong, our CPRE secretary, and the CPRE staff in general. Dr. Porter's criticism and editing help have increased the clarity of each of the case studies. State policy officials informed these case studies through their insights, advice and provision of current state documents. Dr. Archbald's earlier work summarizing state policies have served as useful guides in these analyses. My work builds on his.

INTRODUCTION

The POTENTIAL STRENGTH OF STATE EDUCATIONAL POLICY SYSTEMS: FOUR CASE STUDIES

Alexander K. Tyree, Jr.
December, 1991

Introduction

This report describes characteristics related to the potential strength of state curriculum control policies in New York, California, Florida, and Texas. Each of these states has recently strengthened its influence over the high school curriculum. This report examines the strength of the state policies that:

1) define the high school curriculum,
2) address student graduation course requirements,
3) test student knowledge of the curriculum,
4) address teacher certification and staff development,
5) evaluate the quality of schools,
6) create information management systems bearing on the quality of education,
7) control the selection of educational materials, and
8) press for greater control of the curriculum in other unique ways.

This set of case studies applies an analytic framework developed by researchers at the Institute for Research on Teaching to assess the strength of state curriculum policies. Drawing on their findings and earlier work by Spady and Mitchell (1979), researchers at the Institute conceptualized dimensions of policy strength and identified educational policies most likely to affect teaching decisions. Schwille et al., (1986) defined policy strength as the likelihood that a state educational policy will influence teachers' decisions about what to teach or how to teach it or both. They argued that such influence is greater when state policies are more consistent, prescriptive, authoritative and powerful.

Consistency describes both the internal consistency of a particular policy and the external consistency among different state policies. When a particular policy (e.g., curriculum guidelines) seems to contain mutually supportive and matching elements, teachers are more likely to incorporate that policy into their work. For instance, if the state publishes conflicting sets of curriculum guidelines, teachers are unlikely to know which parts of which guidelines they should implement. Also, when different state policies are more consistent with and supportive of each other, they are more likely to influence teaching decisions (Porter, Floden, Freeman, Schmidt, & Schwille, 1986). For example, if a state test is mandated by law, has been developed by testing and curriculum experts, and is supported by influential individuals, teachers are more likely to regard state testing as authoritative. On the other hand, if the state does prescribe a curriculum but neither test students knowledge of that curriculum nor require that students master the curriculum, teachers may be less inclined to incorporate the state curriculum into their teaching. Internal inconsistencies may generate external inconsistencies. For

instance, if there are two sets of curriculum guidelines, aspects of one set may cohere with the testing policy, but aspects of the other set may conflict.

Prescriptiveness is defined as the specificity and extensiveness of a policy in directing teaching decisions (Porter et al., 1986). Curriculum guidelines are the most likely policy area to constrain such decisions. A completely prescriptive set of curriculum guidelines might specify content and teaching methods or processes associated with each of the following aspects of the curriculum:

1) overall goals or mission of subject curriculum
2) course objectives
3) invariate course sequences
4) unit objectives
5) lesson structure & objectives
6) lesson sequencing
7) exemplary activities and teaching methods
8) materials to be used for instruction.

Thus, states that only specified the content for a set of goals and course objectives for required courses would be less prescriptive than states that identified the content and teaching processes of the units in every required course.

Authority makes state policies more likely to influence teaching decisions. Those policies that appeal to more explicitly to more non-conflicting bases of authority are more likely to carry weight with teachers. Policies can appeal to one or more of the following bases of authority: law, expertise, social norms or support from charismatic individuals, or some combination of these (Porter et al., 1986). For example, if the state's testing policies are mandated by state law and the tests explicitly reflect the work of testing and curriculum experts, explicitly reflect what is commonly tested and testing policies receive active backing from influential individuals, teachers are more likely to regard these testing policies as authoritative.

Power is likely to influence the implementation of state curriculum policies at the school level. Rewards and sanctions give policies power. When the state offers incentives for improved school scores on state tests, they may encourage teaching of material likely to be on the test. Likewise, if students' graduation can be withheld until students pass a required state test, teachers are more likely to incorporate test material into their teaching. Given the large number of state curriculum policies, local school officials and teachers are more likely to apply policies with concrete and reliable consequences for the school, the students or the teachers than policies for which there are no clear or consistent consequences for one or more of these groups.

Information contained in the case studies comes from two sources: documents provided by each state and interviews with state officials. Confidentiality has been preserved. Information about policies does not necessarily come from officials directly involved in the administration of those policies. I asked several officials the same

questions. I am indebted to the time all state officials spent informing me about many things that shape policy, but are missing in policy documents. Each case study is a working document, subject to revision pending feedback from state officials interested in offering advice and criticism.

New York, California, Florida, and Texas are ideal states in which to study the strength of curriculum-related policy systems. Each of these states has worked to strengthen their curriculum systems by modifying most of the policy systems listed in the first paragraph. Though each state is unique, they share many characteristics common to populous states with socially diverse populations. The descriptions of state policy systems that follow will evidence the complex structure of the policies that together and separately comprise major state curriculum control systems.

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THE STRENGTH OF THE CALIFORNIA STATE CURRICULUM CONTROL SYSTEMS

THE STRENGTH OF THE CALIFORNIA STATE CURRICULUM CONTROL SYSTEMS

I. INTRODUCTION

This study of California's curriculum control systems for high school mathematics and social studies investigated seven policy areas: 1) curriculum guidelines, 2) graduation requirements, 3) student testing, 4) school evaluation, 5) teacher certification, 6) instructional materials selection, and 7) the information system. To measure the strength of the California curriculum control systems for high school mathematics and social studies, the policy areas were studied in terms of four criteria: consistency, prescriptiveness, authority and power. In terms of control strength, California curriculum policies reflect moderate to low levels. The policy areas have a moderate to high level of consistency with each other. Generally, the policy areas show a moderate level of authority and low levels of prescriptiveness and power. California's curriculum policies continue to change rapidly, complicating efforts to summarize them. This description of state policies best reflects documents and interviews through early 1990, modified by supplemental feedback from state officials in the summer of 1991. State officials offer evidence of increasing authority, power, consistency, and prescriptiveness.

Since about 1972, California has had K-12 curriculum guideline documents; they are called Frameworks.[1] These have identified the philosophy, scope, sequence, and general content and skills appropriate for every academic subject area, including mathematics and social studies. However, the 1980s brought major changes, especially in social studies, renamed History-Social Science (HSS) in 1981. The Educational Reform Act of 1983[2] mandated the development of minimum state-wide graduation standards by subject area: a core curriculum for grades 9-12. These were called the Model Curriculum Standards (MCS), published in 1985. In a strictly formal sense, there are now two sets of State curriculum guidelines: the Frameworks and the MCSs. However, since the more recently published Frameworks have been formally adopted by the State Board of Education, the Frameworks have superseded the older MCSs (Respondent 1, Respondent 2). State officials no longer use the MCSs as guidelines for state curriculum.

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[1] I use the word guidelines to refer to all the documents that might describe the state-recommended curriculum: in California these include both the Frameworks and the Model Curriculum Standards guidelines.

[2] After several years without any state-wide graduation requirements, the 1983 Act re-instituted course requirements for graduation. The law also required the development of standards for the curriculum as a whole. The Model Curriculum Standards for grades 9-12 included the following subjects: English/language arts, foreign language, History-Social Sciences, mathematics, science, visual and performing arts.

The California curriculum guidelines lack prescriptiveness at the level of instruction. They have moderate levels of authority and power. The Model Curriculum Standards and Frameworks appeal to different sources of authority, and though neither are particularly powerful (i.e., they lack sanctions and rewards). Districts are only required by law to compare their curricula to the Model Curriculum Standards; they are not required to adopt either the Model Curriculum Standards or the Frameworks. California curriculum guidelines are less prescriptive than those in New York. However, the California Department of Education continues to integrate a focus on the guidelines across several policies in ways not yet common in New York or Florida. Especially since 1983, the California Department of Education has produced observable alignment between the state Frameworks, state-controlled staff development, state-mandated student testing, state-designed school evaluation and state textbook policies.

Since 1983, there have been statewide course graduation requirements. Prior to that time, local district control of graduation requirements was paramount. In 1983, both the California legislature and the state Board of Education acted separately to raise or at least equalize graduation standards for all California high school students. The state Board of Education recommended a set of requirements for all high school students in a document called Raising Expectations: Model Graduation Requirements. Almost simultaneously, the legislature enacted the Educational Reform Act of 1983 (CA1983), increasing the minimum number of courses required for graduation. In general, the Board of Education recommended more courses than the legislature required. Beginning with the 1986-87 school year, all California public school students could graduate only after completing all the required courses. The legislative requirements were not particularly prescriptive; or strongly consistent with other state curriculum control policies; but they were formally authoritative and powerful. These combined initiatives in graduation requirements lent authority to and stimulated other major reforms in California educational policies that continue to the present day.

Prior to 1983, as a state, California did not conduct student achievement tests. The Golden State Examination, developed from 1985 to the present, is the only state program in California designed to test individual student knowledge of a specific high school course. It is voluntary; students can take examinations in up to six subject areas (e.g., algebra, chemistry, economics) to show their higher proficiency in particular subjects. Should they do so, they receive an honors designation in that subject on their high school diploma. Instituted by the 1983 act, the only mandatory state testing program, the California Assessment Program (CAP), is based on tests taken by all students in subject areas at different grade levels, including the eleventh grade. However, the state analyzes test results from a matrix sampling of test items, not by individual student scores. Matrix results are reported to the public on the school level. CAP tests appeal to formal authority of the legislative and expert authority of mathematics and testing experts, though not to charismatic or normative authority. The mathematics portion of the 11th grade CAP test (the History-Social Science portion is

not available yet) is consistent and prescriptive with respect to the Framework. The CAP is consistent with those policies that reflect the Quality Indicators of Excellence, one of two sets of school evaluation policies. Through the programs based on the Quality Indicators (see school evaluation section), the CAP test scores maintain high visibility to school officials and the public. They have become a chief means of comparing schools to each other.

The California Department of Education monitors and reports the quality of high schools through "Quality Indicators," including California Assessment Program test scores, an indirect indicator of curriculum Framework adherence. The California Department of Education follows this monitoring with annual Performance Reports for every school, and the state Board of Education issues non-cash awards for high-performing schools at well-publicized and attended ceremonies (Respondent 3). The CAP tests are highly prescriptive, and highly consistent with most other curriculum control policies in California. They are moderately powerful, and are based on a moderate degree of authority.

Another major state program allows local high schools to assess their school's curriculum quality: the Program Quality Review (PQR). The California Department of Education does not directly evaluate local schools' use of the curriculum Frameworks. It does however encourage schools to use PQR processes and standards; half of these later assess the extent to which schools adhere to the general principles of each subject Framework (the program "Quality Criteria"). Also, by extension, Program Quality Reviews are required by "all schools with Chapter 1, EIA/SCE, school-base coordinated programs, school improvement programs through Senate bills 65 and 1882" (Respondent 6). High schools may also undergo a two- to five-day evaluation visit by a regional accreditation agency, the Western Association of Schools and Colleges (WASC). High schools may choose to use a review process that combines the regional process with the Program Quality Review. One state official estimated the number of high schools that use combined reviews as near ninety percent (Respondent 3).

At the time of this report, secondary school teacher certification policies in California are almost unconnected with other curriculum control policies, especially the curriculum Frameworks. By contrast, the school-based staff development policies, through their reference guidelines to Quality Criteria, PQRs incorporate curriculum Framework goals. Ongoing state staff development initiatives, dissatisfaction with the previous scattered approach to staff development, and new state money through SB1882 all have contributed to a tighter alignment between staff development, the curriculum Frameworks, and the Program Quality Review part of the school evaluation system. Generally, these policies are moderately authoritative and powerful.

Unlike California's requirements for elementary school materials selection, California's high school instructional materials criteria are advisory. Documents from History-Social Science and mathematics, and interviews with state officials, reflect the

kind of advice California Department of Education gives to high schools on materials selection. This advice is authoritative to the extent that the Frameworks are authoritative, and there is no power behind the recommended selection criteria. On a every general level, state advice embodied in the Framework documents in mathematics and History-Social Science and some supplementary materials guides are consistent with the overall Framework goals. However, materials advice lacks prescriptiveness at the course level for almost all high school mathematics and social studies classes. The unit in charge of History-Social Science has prepared a guide on recommended and non-recommended textbooks through grade 8. It plans to publish more specific advice on high school materials in the winter of 1991-1992 (Respondent 1).

The California Basic Educational Data System (CBEDS) collects and analyzes several kinds of data, most of it indirectly related to the curriculum Framework. Annually, the California Department of Education asks that local schools assist the department by collecting data on the county/district, the school and the professional assignments of teachers. County/district data includes: minimum graduation requirements, teacher shortage and demand information; the status of contract negotiations; and the extent of federal funding for any staff positions. School data includes: enrollment (in selected courses) and graduation data; instructional time; student attendance and alternative school programs; and the number of classified staff. Teacher data includes certification data, ethnicity; educational level; the number of teaching assignments, and what subjects teachers teach; whether the assignment is for courses for the college-bound; and the salary and full or part time nature of the position. CBEDS does not appear to be designed to augment a curriculum control policy, though it connects student course requirements and the information system. Its data allows the California Department of Education to monitor district course requirements and assess the extent to which students are meeting them. Thus, it is minimally prescriptive, powerful and authoritative with respect to the curriculum Frameworks.

II. The Policies

A. Model Curriculum Standards and Frameworks

There are two sets of state curriculum guidelines in California, the Model Curriculum Standards and the Frameworks. The former were required by 1983 legislation. The latter have been available since 1972 and are revised on an eight-year cycle. There are consistencies and inconsistencies between these two sources of curriculum direction.

1. The Model Curriculum Standards

During the Proposition 13 era, California did not mandate graduation requirements. This led to a period in the 1970s of diverse graduation requirements and

diverse curricula throughout the state. The Educational Reform Act of 1983 (sometimes called the Hughes-Hart Act or SB813) broke from the Proposition 13 era by re-establishing state graduation course requirements and state development of standards for all courses required for graduation. The 1983 Reform Act required two years in mathematics, and three years in History-Social Science. It also required that the state Superintendent of Instruction "coordinate the development, on a cyclical basis, of curriculum standards." And, it required that the superintendent articulate standards in "a wide range of specific competencies, including higher level skills in each subject area" and develop these standards in collaboration with teachers, other educators, and private industry (CA1983, p. 2225). After considerable committee work and discussion by separate subject committees, the state Board of Education adopted what are now called Model Curriculum Standards (9-12 MCS) for a core curriculum. The Act also called for local district review of their curriculum in light of the standards every three years. But the Act did not require that districts or schools actually adopt the curriculum. The Act further stated that "neither the Superintendent nor the Board shall adopt rules or regulations for course content or methods of instruction" for local districts (CAMCS, p.4). As the 9-12 MCS points out, the standards were designed as a model for good curriculum, "not a mandate" (CAMCS, p.5).

While the Act required a collaboration between different kinds of educators and between educators and non-educators, most collaboration in History-Social Science and mathematics involved secondary and college educators (CAMCS, p. M-vii-viii, p. History-Social Science-vii-viii). Subject committees, Curriculum Advisory Committees (CACs) met in the spring of 1984 to write subject standards. Like most other CACs, the mathematics and History-Social Science CACs had 25 to 40 members, including teachers, faculty from post-secondary, some private foundation or educational industry representatives, institutions, administrators, curriculum specialists, consultants, and state Board of Education members. Aided and overseen by a Steering Committee (each of the chairs of the subject committees), the CACs drafted and re-drafted (some went through at least ten drafts) the standards until a high degree of consensus emerged (according to the 9-12 MCS document's introductory remarks). Then "more than 300 educators from 80 school districts in four special field review sessions" read and commented on the drafts (CAMCS, p.5). Participants in these sessions were asked to return to their districts and share the standards with their colleagues. Follow-up sessions were held in December, 1984. Feedback from these sessions was incorporated into revisions that led to the publishing of the 1985 Model Curriculum Standards.

Model Curriculum Standards seem to be part of California's past. First, few teachers saw them (Respondent 2). Second, they have been superseded by the more recent Frameworks (Respondents 1, Respondent 2). California DOE officials seem more involved with revising, supporting or implementing the Frameworks than with revising the MCSs. For example, History-Social Science is working on guidelines for textbooks, course outlines, and Framework dissemination programs (Respondent 1); the mathematics unit has turned to revising its 1985 Framework similar to New York's

sequential math courses and to development of pioneering mathematics programs such as Math A (Respondent 2).

Finally, though the 1983 law did not address curriculum alignment, the California state Department of Education has concluded that alignment between a core curriculum and other educational policies is important.

> CURRICULUM AND INSTRUCTION must be placed at the center of state and district improvement efforts, and all materials relating to curriculum content must be integrated. Thus, the Model Curriculum Standards are being aligned with State Frameworks, handbooks, the State Board's Model Graduation Requirements, Textbook Standards, University Expectations statements, California Assessment Program (CAP) test specifications, and forthcoming model curriculum statements for grades K-8 (CAMS, p. 8).

However, this California Department of Education statement does not indicate what is being aligned with what. The mathematics Model Curriculum Standards and Framework were revised within the same year (1985). They appear aligned. However the History-Social Science Model Curriculum Standards (1985) and Framework (1988) were written at different times and differ considerably from each other. For reasons discussed in the section on guidelines consistency, the 9-12 Model Curriculum Standards seemed to have been superseded by other state educational policies, particularly by changes in the post-1985 Frameworks. While the state Frameworks are revised every eight years, the 9-12 Model Curriculum Standards have not been revised. While the Model Curriculum Standards ushered in major formally authoritative changes in educational reform, they have not continued to influence educational policy-making at the state level.

2. Frameworks

Before and after the 1983 law, the California Department of Education has developed what it calls curriculum Frameworks for every subject area. In California, Frameworks cover the general theory and guidelines of the entire K-12 subject program (not just required but also recommended courses). Also, each Framework discusses the selection of instructional materials, and the elements of grade level or course content. Under the authority of the Board of Education, with the assistance of the Framework committee and the assistance of CDE staff, and with input from state educators and the public at large, the Curriculum Development and Supplemental Materials Commission (called the Curriculum Commission) revises the Frameworks (and text adoptions for 1-8 schools) at regular intervals (Respondent 10). As of 1990, revisions are scheduled every eight years (Respondent 1, Respondent 6); the current schedule runs through the year 2000 (Respondent 10). The most recent mathematics Framework was published in 1985, and the most recent History-Social Science Framework was published in 1988. A

comparison of the 9-12 Model Curriculum Standards and subject Frameworks reveals that the mathematics curriculum guidelines are more internally consistent than the History-Social Science guidelines. Because the mathematics and History-Social Science Frameworks vary in the extent to which the reflect their corresponding 9-12 Model Curriculum Standards, I will discuss mathematics and History-Social Science separately.

(a) mathematics

In mathematics, the 9-12 Model Curriculum Standards were developed simultaneously with the Framework. With few exceptions the Model Curriculum Standards and Framework reflect the a similar structure, set of core concepts and prescribed practices. Both were written at about the same time. The Framework committee met eleven times from November, 1983 to January, 1985, while the CAC met in the latter half of 1985. The mathematics Framework refers to the 9-12 Model Curriculum Standards developed by the CAC as "important companion documents."

The mathematics Framework identifies both general and more specific content relevant to high school mathematics. Both the 9-12 Model Curriculum Standards and the Framework identify student general competencies in mathematics content (in number, measurement, geometry, patterns and functions, statistics and probability, logic and algebra). Both of these documents also argue that learning mathematics concepts, mathematical problem-solving[3] and applications should form the basis of mathematics instruction; the 9-12 MCS refers to this as the "core content of mathematics" (CAMCS, p. M-2). Both the 9-12 Model Curriculum Standards and the Framework stress that every student should learn the fundamental concepts of mathematics, should be able to solve mathematical problems and apply mathematics to the solution of non-routine problems in practical situations.

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[3] The mathematics Framework states that problem-solving involves students' use of acquired knowledge and skills when dealing with new or unexpected situations (CAFM, p. 13). Problem-solving includes the following elements: formulating problems, analyzing problems and selecting strategies, finding solutions, and verifying and interpreting solutions (CAFM, p. 14). Each of these elements is broken down into operations teachers might teach students. For example, analyzing problems and selecting strategies includes nine elements such as: making a model, drawing a picture, organizing information in a table, and so on. As described in the framework, problem-solving should accompany innovative instructional techniques, such as "situational lessons," using concrete materials, being flexible in deciding how much content to cover, helping students correct misunderstandings and spending time on remediation, using cooperative learning, teaching the language of mathematics to students, and using questioning strategies aimed at helping students think through problem-solving steps (CCAFM, pp. 15-18).

b) History-Social Science

The History-Social Science curriculum guidelines contain two somewhat different documents identifying the state-preferred curriculum. While there are similarities between them, the Framework and the Model Curriculum Standards are qualitatively different documents.

In accordance with a discipline-focused curriculum model, both the History-Social Science 9-12 MCS and the History-Social Science Frameworks emphasize history and geography (Alexander and Crabtree, 1988). The 1981 social science Framework emphasized a curriculum that promoted citizenship in the context of a multi-elective course structure. The Framework emphasizes geography less than history, while the Model Curriculum Standards focuses more obviously on the incorporation of geography.

Both the Model Curriculum Standards and the Framework address content and higher order thinking process objectives in History-Social Science. For example, both speak of teaching important content while stimulating higher order thinking. However, they differ in the way they speak of the content. The Model Curriculum Standards lists concepts, facts and generalizations students should get from a course. The Framework identifies the interpretation students should get from a course. Both the Model Curriculum Standards and the Framework promote teaching critical thinking skills. However, the Framework extends both the content and skills focus by concentrating on "curriculum strands." These include the Model Curriculum Standards and 1981 Framework skills goals of basic study skills, critical thinking and participation skills.

The Framework, and to a lesser extent the 9-12 Model Curriculum Standards, differs from past Frameworks in the focus on cultural literacy. The History-Social Science Framework lists several skill-focused content understandings they call "literacies:" historical, ethical, cultural, geographic, economic, and socio-political. Three other strands cover democratic understanding and civic values teachers should inculcate into their students: 1) national identity, 2) constitutional heritage, and 3) civic values, rights and responsibilities. Nowhere in the Model Curriculum Standards are these strands discussed explicitly.

There are other differences between the Model Curriculum Standards and the Framework. The 1988 History-Social Science Framework promotes education in depth through several devices, including the limiting of high school history courses' chronology to more recent history, and teaching history with a multitude of primary sources (letters, literature, and so on). These and other changes make the Framework different, not only from the Model Curriculum Standards, but also from the teaching of social studies in most of the rest of the country.

Traditionally, as in the 9-12 Model Curriculum Standards, high school U.S. and world history courses attempt to cover the entire chronological scope of these subjects.

U.S. History in high school, if taught mainly according to the Framework, begins at the turn of the century, leaving the previous history to be taught in the lower grades. The Framework is not strictly chronological. It recommends, at each grade level, a unit of review of earlier studies from "a more mature perspective" (Respondent 1). In contrast to the primarily chronological emphasis of the Framework, the History-Social Science Model Curriculum Standards organizes learning topically. It lists topically-arranged learning objectives for U.S. History; these topics span all of U.S. History. For example, it addresses the trends of isolationism and activism across different historical periods. The History-Social Science Model Curriculum Standards and Framework reflect different views of what constitutes important social studies knowledge and of how social studies knowledge should be organized and taught.

B. Course Requirements

In order to graduate from high school, California students must complete at least eleven credits (1 credit=1 year; about three required courses each semester of all four school years). The state Board of Education recommended sixteen credits. Legislative requirements match Board of Education commendations for History-Social Science courses, but they diverge in mathematics. Both requirements specify three years of History-Social Science, namely: World History, culture and geography (1 year), U.S. History and geography (1 year), and one semester each of economics and American government and civics. The Board of Education recommends three years of mathematics, namely: Algebra, Geometry and an elective course. The state requires only two years and does not specify any particular courses. Table 1 summarizes the differences between the legislative mandate and state Board of Education recommendations.

Table 1-California Graduation Course Requirements and Recommendations in History-Social Science and Mathematics

Subject	Board of Education	Legislated Requirements
History-Social Science	3 years	3 years
U.S. History	1 year	1 year
World Civilization	1 year	1 year
Government	1/2 year	1/2 year
Economics	1/2 year	1/2 year
Mathematics	3 years	2 years
Algebra	1 year	not required
Geometry	1 year	not required
Elective	1 year	not required

The state is making efforts to evaluate the impact of the course recommendations and requirements. Recent evidence indicates that course-taking in mathematics has risen since 1985 (Respondent 2).

C. Student Testing Policies

1. The California Assessment Program Test

The 1983 Education Act required a testing program in all school districts. In addition, it required that the California Department of Education develop program assessment tests, testing both higher order skills in "content courses"[4] (p. 2138 Statutes of 1983) and basic skills in "basic skills courses." It specified that the state develop achievement tests in subject areas, including but not limited to, literature, history, advanced mathematics and science (p. 2138, Statutes of 1983); and in "basic skill courses," including reading, spelling, basic mathematics, and effectiveness of written

[4] The 1983 statute defines content courses as those that "require the integration of factual matter, logical analysis, the solution by the student of posed problems, and the communication of ideas." Basic skills courses are those that "involve, among other skills, memorization and mastery of specific functions, including, but not limited to, reading, spelling, basic mathematics, and effectiveness of written expression.

expression (p. 2138, Statutes of 1983). This provision also specified examinations at all public schools, at grades 3, 6, 8, 10, 12 (since changed to grades 5 and 11). Further the legislature demanded that California Department of Education develop standards whereby test results could be used to evaluate educational success or failure. This testing program is called the California Assessment Program, and the tests are called CAP tests. The California Assessment Program examines individual students' knowledge of subjects but reports results only at the school, school district and state level. Students' individual scores are not analyzed. The California Assessment Program has about 40 professional employees, making it the largest of the units in the California Department of Education and larger than all subject matter units together (Respondent 2).

Presently, the eleventh grade CAP test assesses the quality of mathematics, reading and writing program by testing student achievement for the ninth through the twelfth grade. There are plans to assess History-Social Science knowledge in the 1990-1991 CAP test. The mathematics portion of the test reflects the sort of knowledge prescribed in the Framework, including problem-solving (as defined in the Framework). There is no tenth grade CAP test though there are plans to develop one. At the present time, the only evaluation of subject knowledge is the eleventh grade CAP test.

To test the quality of a subject program, the California Assessment Program uses a matrix sample of questions, a random sampling of questions from a larger pool of possible questions. There are about 30-40 versions of a test so that no one student in any class gets the same test. In this way, the performance of the school's subject department can be assessed. While each student in a school may take a test with different questions, sampling will guarantee that the school results will accurately reflect the quality of student understanding of the instructional program.

2. The Golden State Examination

Also mandated in the 1983 legislation were examinations modeled after the Regents system in New York. Students who wanted to receive honors diplomas could do so by passing Golden State Examinations. For every subject in which they passed a Golden State Examination, students were to receive a special diploma. Subject examinations funded by Golden State have increased to six at the time of this report (Respondent 2).

D. School Evaluation Policies

Like other states, California monitors high schools' compliance with a host of regulations few of which focus on curriculum. Curriculum-focuses high school programs include the Program Quality Review and programs based on the use of Quality Indicators of Excellence. The two types of policies, each of which include one or more programs are: 1) the quality criteria policy, and 2) the accountability policy. The first is a local school qualitative evaluation system called the Program Quality Review that builds on

state curriculum guidelines and a state system to train local and regional educators in conducting a school Program Quality Review (PQR). The other is an accountability program, based mainly on the monitoring and reporting of quantitative measures, called quality indicators of school performance. Both policies encourage the application of state Frameworks, the first directly, and the second, indirectly.

1. Quality Criteria-based Programs: Program Quality Reviews and the School Improvement Programs

Over 90 percent of California high schools may use some form of a Program Quality Review (PQR) process from every three to every six years (Respondent 6). Program Quality Review originated in the School Improvement Program, an incentive program to encourage schools to develop and implement school-site effectiveness plans. The program has grown from a elementary school program based on effective schools research, to a K-12 curriculum-focused school improvement review. Many schools now use state-developed Program Quality Review materials, and local and regional reviewers are trained in Program Quality Review methods.

Before 1983, School Improvement Programs were oriented to providing services for special-needs students (PACE, p.17). Then, the California Department of Education personnel evaluated these programs every three years by a process called the School Improvement Program Quality Review. Now the PQR process reviews the needs of all students with respect to the eight curriculum and eight school-wide criteria.

Beginning with the 1983-84 school year, the California Department of Education made the following changes: re-wrote their Program Quality Review criteria to reflect a core curriculum Framework emphasis; and trained review teams to use the more extensive review process. The School Improvement Program is still active though few secondary schools, and fewer high schools, receive School Improvement Program funding. Because state officials differ on the number of high schools that actually use a PQR process, it is difficult to determine precisely how many high schools use some form of PQR in a particular year. PQR standards, the sixteen quality criteria, are written into the joint Western Association for Schools and Colleges/California accreditation process (called "Pursuing Excellence," and six separate state funding programs require schools to use the PQR process of self-study and improvement. As a result, it is estimated that "well over 90 percent of all high schools use a form of PQR as an external review every three to six years (Respondent 6). As a form of school self-study and improvement, PQR appears to be widespread among state high schools.

Program Quality Reviews, the main hub of the School Improvement Program, have changed substantially since the early 1980s. They are the third generation of attempts to encourage local districts to follow the educational direction of the California Department of Education. The first and second generations focused mainly on process outcomes. Influenced by the effective schools literature, the School Improvement

Program staff developed school effectiveness indicators, with ranking scales for each school effectiveness criterion. The School Improvement Program monitored compliance with these effective school criteria (Respondent 5).

Beginning in 1983, the legislature mandated local school district reviews of the extent of alignment between state and local curriculum guides. The California Department of Education stopped directly reviewing School Improvement Program programs in 1983, though they created an entirely new Program Quality Review guide, and a hierarchical training system[5] trainers teach other trainers, and regional trainers teach local educators how to conduct a Program Quality Review. The third generation of Program Quality Reviews concentrated one-half (8) of the Program Quality Review on curriculum alignment criteria for each subject program and the other one-half (8) on school effectiveness criteria. Program Quality Review has spread from a process used in School Improvement Program to a more generally-applied state-sponsored system of school review.

The Program Quality Review process presently includes three steps: school self-study, school external review and school action plans. Prior to site teams visiting, schools review their entire school program, using the Quality Criteria for High Schools document including the content (curriculum and school effectiveness criteria) and process (where to get data, from whom and how) of the review. In the self-study, the school picks two curricular and one school-wide or three curricular areas on which the external reviewers will concentrate their work. Typically, schools will prepare their self-study in the fall and have an external review in the early spring (Respondent 6). Local or regional consortia evaluators, trained in the Program Quality Review process in the training model established by the Office of School Improvement spend two to five days evaluating the school. They match the criteria to what they find: matches are called program strengths, and gaps are called suggestions for improvement and action plans (Respondent 5). The criteria and the findings are qualitative, unlike those used in the programs based on the Quality Indicators of Excellence.

PQR reviewers write a report (the "Report of Findings") that the school then uses to develop three action plans. A copy of the Report of Findings from all Program Quality Reviews is logged in the Office of School Improvement; a copy is forwarded to WASC if high schools are involved in joint accreditation reviews and are used as references for consultation with schools over the year. These reports are reviewed by a consultant in the Department of Education (Respondent 6). The action plans serve to guide the school in improvement over the next three to six years, when they are reviewed again in self-study and external review (Respondent 5).

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[5] Similar to the New York syllabus dissemination inservice.

Training for Program Quality Review is controlled indirectly by the state. While locals or consortia do all of the external reviews, School Improvement Program reviews and high school improvement plans arising out of the new staff development law require the use of Program Quality Review materials. First, the Office of School Improvement trains master trainers; these later train consortia trainers; and consortia trainers teach local reviewers (Respondent 6). The program trains about 10,000 reviewers every year (teachers and other staff people). Nearly all high schools are reviewed every three to six years using Program Quality Review criteria.

Not only does the review process cover a lot of schools, but also it covers every academic program in the high school. Criteria that match the Frameworks set the standards for the review of every academic program. Neither the Florida nor New York school evaluation systems examine curriculum in such detail. In addition, similarly to New York, the Program Quality Review examines seven aspects of the school's overall effectiveness.

State officials do not regard the Program Quality Review process as a compliance mechanism. According to them, the program is effective because self-study and external reviews press schools to think seriously about the education they provide and because they do so voluntarily. According to state officials' reports of state surveys of local school staffs, schools have invested so much of themselves in the Program Quality Review process that they prefer it to previous forms of evaluation (Respondent 5, Respondent 6).

What began as a school improvement program targeted at special needs populations, using only "school effectiveness" indicators in elementary schools, has expanded considerably. Now, the Office of School Improvement supervises training and provides criteria for school-level review of alignment with Framework goals and school effectiveness in all schools. If the reviewers are well-trained, the Program Quality Review process and content allow potentially close alignment between local curricula and state Frameworks (Respondent 5, CASIPEV).

2. Programs based on the Quality Indicators of Excellence designed to influence schools

(a) The Annual Performance Report

An integral part of accountability is the annual Performance Report (PR) for every public school in California. This report compares schools to other schools in the state. The PR compares schools on the quality indicators listed above. According to the key concepts section of the PR, schools are urged to develop additional measures of school quality, such as:

-the strength of the school's curriculum
-the school's vitality and harmony

-the amount and quality of writing assignments
-the number and types of books read by students
-the support the school receives from the community
-the awards and recognition received by the school
-the nature and quality of support the school provides for special-needs students

(b) The Education Improvement Incentive Program

The 1983 Education Act created this program to base school improvement programs on the new CAP tests, measuring learning in subject programs at each school. The Education Improvement Incentive Program, commonly known in California as "Cash for CAP" was an incentive program that allotted extra funds to school districts that volunteered to improve their CAP test scores. According to Article 2.5, the program based the amount schools would get on a complex formula including number of students, CAP test score improvement over the prior year, and state-wide CAP score improvement to make awards. While it is still on the books, the legislature funded this program only from 1985-1987. The Program Evaluation Division was not happy with the looseness between the program and the curriculum Frameworks.[6] Following a state Department of Education evaluation, the program was cut from the budget by the legislature (Respondent 3).

(c) The California School Recognition Program

In addition to the Performance Report, the California School Recognition Program is meant to be an moral incentive for exemplary schools. In effect, it replaces the monetary incentive offered by "Cash for CAP." This program recognizes "distinguished schools," exemplary programs, or exemplary accomplishments. The quality indicators provide the data for such designations and awards. The School Evaluation and Research Division, producers of the annual school Performance Reports, sorts schools by CAP scores (not other quality indicators) and makes awards to about 20% of the state's schools every year. The program is conducted with much fanfare and seems to mean a lot to Californians. However, the burden of finding and awarding 20% of the schools is too great and the division looks to reduce that percentage to 10% (Respondent 3).

The results of this accountability program for schools are unclear. School annual Performance Reports are sent to the local press, and publicity of the findings will vary with the newspaper and the extent to which newspaper staff understand the findings. Schools that understand the meaning of the statistics in the Performance Reports are more likely to take action on the findings. However, according to one state official, not

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[6] Cash awards were based on the eleventh grade CAP test, but the CAP test at that time did not reflect the new 1985 mathematics Framework.

all districts have staff with sufficient ability to interpret the results that can vary widely. Generally speaking, the effect of reports on the quality indicators depends on the expertise of staff at the district or school level (Respondent 3).

Schools are not required to pay any attention to the Performance Reports. However, at least three factors work against ignoring the PR. First, local newspapers get copies of the Performance Report, and most report the results in some form (Respondent 3). Second, the Performance Report describes CAP test scores; most schools take these scores seriously, according to the consultant with whom I spoke. Third, the School Evaluation and Research Division informally monitors particularly high- and low-performing schools (based on the CAP test). The School Evaluation and Research Division maintains criteria that every district should improve its previous CAP test scores by at least three percent. The top and lowest quarters are monitored, and sometimes these schools will receive additional reports from the School Evaluation and Research Division. This is neither a regular nor legislatively authorized behavior and schools are not required to improve their CAP test scores or any other indicators of the quality of education.

E. Teacher Certification and Staff Development Policies

1. Teacher Certification

It is not necessary that teachers in either subject familiarize themselves with their respective subject Frameworks. For this report, the provision most relevant to the Frameworks is "subject-matter competence." A candidate can establish this in two ways: 1) receive a statement (a "waiver") from a college assuring that the candidate has enough education to teach their respective subject, or 2) pass the National Teachers Examination (with a score of 630 or greater), administered by the Educational Testing Service, in their subject. To teach mathematics, a teacher need either receive a "waiver" or pass the mathematics test. However, to teach history, candidates must receive a "waiver," since no National Teacher Examination is available in history. To teach social studies a candidate must either receive a waiver or take the social studies test.

The certification materials do not indicate what passing the National Teacher Examination in social studies will allow high school teachers to teach. As in New York, teacher certification is mainly the domain of schools of education. Unlike New York, California prescribes a fifth year of education, but that does not specify any additional subject teaching competence.

One state official argued that the teacher certification standards in subject areas were inadequate. This individual had served on a committee that was considering bringing credentials requirements more into alignment with the Frameworks. According to a state official, the National Teacher Examination asked far too many questions on general pedagogy, and far too few questions on the subject area. Presently, the

California Department of Education is working for changes in the present National Teacher Examination more in accordance with California's Frameworks (Respondent 1). A call to the Commission on Teacher Credentialing indicated that such issues were being discussed, but any changes in teacher credentialing are not likely to happen soon (Respondent 7).

2. Staff Development

State staff development programs in California have traditionally involved state funding of numerous programs, administered by a proliferation of agencies at the local and regional level. Examples of such state-funded programs operating at the local or regional level are the Mentor Teacher Program, the California School Leadership Academy, the Classroom Teacher Instructional Improvement Program and the Cal Writing Project. Historically, these programs have operated without any regular form of evaluation. Since the 1970s, the emphasis in California staff development has turned increasingly from generic pedagogy workshops to curriculum-focused and content-focused workshops. Commonly, these workshops last two days with additional follow-up in the classroom (Little et al., 1987).

Following a 1987 state-funded Far West Lab/PACE study (Little et al., 1987), the California legislature passed a bill (SB1882, or Chapter 1362) funding a staff development system and linking it to the school improvement system.[7] SB1882 was designed to remedy many of these problems by creating a staff development system. This system provides at least twenty million new dollars a year to a three-tiered staff development/school improvement system that earmarks most staff development funds to secondary schools, and requires that development reflect the curriculum Frameworks and the Program Quality Review process (SB1882, Respondent 5). SB1882 stresses the need for subject matter instructional and school-level planning projects, staff involvement, practical training and follow-up training on site, and coordination with state curriculum Frameworks, and school evaluation programs.

There are three tiers of funding in the law as follows:

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[7] Among other things, the study found that state staff development lacked organization and unifying goals, that much local staff development offered a "menu" of choices with little coherence among the options, and that much staff development did not focus on curriculum as other issues; and finally, they found that there was little systematic evaluation of staff development.

Level one: staff development generated by local school districts, connected with the state Frameworks ($12 million);

-requires a schools plan that reflects the Program Quality Review criteria
-requires an annual review
-targets secondary schools
-plans must be approved by Superintendent (California Department of Education)
-plans should focus on subject matter instruction

Level two: staff development coordinated by regional consortia[8] to meet local needs ($3 million);

-projects will be coordinated with local school improvement plans
-will focus on subject matter instruction

Level three: university and state university coordinated (by region) with subject matter pedagogy and content training for local teachers ($5 million);

-must be subject matter project centers
-teachers must be involved in planning and implementation
-must reflect state curriculum policies, specifically the Frameworks
-must focus on subject matter areas defined by state graduation course requirements
-centers should be located to maximize access to more isolated districts and schools
-projects should be modeled after successful projects, like the mathematics and Writing Projects (CASB1882).

Presently, there are university-based subject matter centers for training in the California Writing Project, and the California Mathematics Project. These programs, including summer school courses and yearly inservice and intervention components, focus on teaching trainers to help teachers develop concrete guides and teaching strategies consistent with the Frameworks. According to a state official, there will be six History-Social Science level three training centers, possibly expanding to eighteen centers in the future (Respondent 1).

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[8] In California, regional consortia organized as advisory committees with representation from constituent districts provide staff development services for groups of local schools who, separately, cannot provide such services.

F. California Instructional Materials Policies

State instructional materials policy for high schools is the responsibility of schools and school districts.[9] It is the state policy to recommend that school districts use Framework-based criteria to guide their selection of whatever instructional materials they select. High school mathematics and History-Social Science materials selection criteria are written into their respective Framework documents. Some additional documents from California Department of Education subject units offer more specific advice on materials selection.

The guidelines for choosing instructional materials printed in each Framework document specify several of the general characteristics of each subject program. In addition to this general instructional materials selection guide, both History-Social Science and mathematics have produced more specific guides for one or more courses. History-Social Science publishes "Adoption Recommendations" for K-8 textbooks, specifying which texts are recommended and which are not. It is the product of the Curriculum Commission, mentioned above. History-Social Science indicates that recommendations for high school texts are forthcoming (Respondent 1). The state adoption process does not cover texts for grades 9-12; districts are advised to use the guidelines in the respective subject Frameworks to guide their text selections (IMFA, p. 4). The mathematics unit has so far formally reviewed textbooks for only two courses: General Mathematics (1987) and Math Analysis (forthcoming). The General Mathematics textbook review is very prescriptive and consistent with the six goals of the mathematics Framework, and accords with the selection criteria identified in the mathematics Framework document.

State materials selection policies in mathematics contains another dimension specific to mathematics materials: to stimulate locally-developed materials for state-wide use. Under the guidance of a key state official, a group of teachers developed a particularly effective Math A course, and the state subsequently helped teachers with the production of their materials. California DOE has encouraged the development of Math A since its inception, working closely with practicing teachers. Math A is now in its third year, with approximately 1000 teachers using it; that number is expected to rise. A national company has agreed to publish a Math A textbook. This sort of state-local entrepreneurial effort is somewhat analogous to the CIMS (Comprehensive Instructional

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[9] Through a materials funding formula, California Department of Education encourages 1-8 schools to use recommended materials. These schools may spend all of their materials monies on approved materials but must spend at least 70% on such materials. Schools can spend up to 30% of their budget on other materials (Respondent 10, IMFA). To my knowledge, the state does not provide high schools funding for instructional materials. High schools are advised to use guidelines in each of the Frameworks documents to select their materials (IMFA, p. 4).

Management System) program in New York in that both stimulate local curriculum development then disseminate the results to other schools.

G. The Educational Information System

The California Basic Educational Data System (CBEDS) collects and analyzes several kinds of data, most of it indirectly related to the curriculum Framework. Annually the California Department of Education asks that local schools assist the department by collecting data on the school and the professional assignments of teachers. County/district data includes: minimum graduation requirements, teacher shortage and demand information; the status of contract negotiations; and the extent of federal funding for any staff positions. School data includes: enrollment (in selected courses) and graduation data; instructional time; student attendance and alternative school programs; and the number of classified staff. Teacher data includes: certification data; ethnicity; educational level; the number of teaching assignments; and what subjects teachers teach; whether the assignment is for courses for the college-bound; and the salary and full or part time nature of the position. The data most relevant to the Frameworks are the course data. Even in this area, for high schools, the only information available is on enrollment in selected courses (algebra, chemistry, physics). CBEDS does not appear to be designed to augment a curriculum control policy, though it connects student course requirements and the information system. Its data allows the California Department of Education to monitor district course requirements and assess the extent to which students are meeting them.

III. EVALUATING THE STRENGTH OF THE POLICIES

A. Consistency

1. Subject Guidelines And Cross-Policy Consistency

Prior to addressing the question of consistency between curriculum guidelines and other policies, it is necessary to discuss consistency within curriculum guidelines. With the advent of the 9-12 Model Curriculum Standards, California had two curriculum guidelines: the 9-12 Model Curriculum Standards and the Frameworks. According to the 9-12 Model Curriculum Standards documents, Frameworks and all other curriculum policies were to be brought into alignment with the 9-12 Model Curriculum Standards:

> Thus, the Model Curriculum Standards are being aligned with the state Frameworks, handbooks, the State Board's Model Graduation Requirements, Textbook Standards, University Expectations statements, California Assessment Program test specifications, and forthcoming model curriculum guides for grades K-8 (CAMCS, p. 8).

The legislature has not yet chosen to fund the formal aligning of MCS and Frameworks. State officials regard the more recent Frameworks as the official state curriculum guides. It is the Frameworks that drive most of the other curriculum policies at the state level.

At least at present, the linkages and alignments between Frameworks and other policies are incomplete but increasingly extensive. Furthermore, alignment varies by subject. Alignment of the Model Curriculum Standards and Frameworks with student course requirements, California Assessment Program tests, school and program evaluations, textbooks and staff development policies is tighter in mathematics than History-Social Science. Since high school History-Social Science CAP tests are in the field-testing stage and no copies were made available to me, and published advice on specific materials for high schools are under development, I cannot yet determine the consistency of these with the Frameworks or other elements of policy. One official states that field tests for History-Social Science at grades five and eleven are aligned (Respondent 1).

The mathematics Framework is linked most directly to the 11th grade California Assessment Program test, to the Program Quality Review program criteria, instructional materials guidelines, and to staff development; and marginally to course requirements. The History-Social Science Framework is presently most directly linked to the Program Quality Review criteria, instructional materials review, the staff development program, and the course requirements; it is not yet linked to the 11th grade California Assessment Program test.

The content and skill emphases in the mathematics Framework are reflected in the present California Assessment Program test to a high degree. Prior to 1980, there were no California Assessment Program tests. Prior to 1987, there was no CAP test in mathematics. The eleventh grade CAP mathematics questions test the same skill and content areas of the guidelines (see testing). The History-Social Science 11th grade California Assessment Program test does not exist yet. It is still being field-tested and therefore, comments on consistency would be premature.[10]

Because both the mathematics and History-Social Science Frameworks themselves contain general guidelines for materials selection based directly on Frameworks, they are

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[10] Based on interviews, questions that would be on the 11th grade test do more than recall facts. Most of the questions (60%) will ask students to compare and contrast ideas across different History-Social Science disciplines (Respondent 1). This information does not enable me to discern the extent to which the Framework and the CAP test concur. I am not sure how the 17 characteristics, the three groupings of strands and twelve strands that make up the heart of the curriculum will turn into questions, when superimposed against the content, concepts and historical interpretations in the 9-12 curriculum.

consistent. For example, at the end of the History-Social Science Framework, authors devote about four and one-half pages to "Basic Guidelines" for selecting History-Social Sciences texts and materials. The mathematics Framework devotes about two and one-half pages to "Standards for Mathematics Textbooks."[11] According to a PACE[12] evaluation of post-1983 educational reforms, textbook selection in high schools occurs at the school or district level; the PACE study finds that schools select their texts on the basis of how texts match the curriculum in use (rather than the state-sponsored curriculum) (Odden & Marsh, 1987, p. 11). Whether districts or schools have changed their practices since then is unknown.

Staff development policies and school evaluation procedures are most strongly and directly linked to both of the Frameworks. The linkages between the Frameworks and these two policies have grown since 1983 due to two major events: expansion of the school evaluation system, and coordination of staff development in terms of the state Frameworks. As a result of the wholesale adoption of Framework goals and standards (in the form of Program Quality Criteria) into the Program Quality Review (PQR)[13] and the new staff development system, the California Department of Education has taken a major step toward greater cross-policy consistency.

In sum, many of California's curriculum policies are consistent with each other and the Frameworks. California Department of Education works consciously to make the Frameworks the basis for all other educational policies. The Frameworks are reflected in staff development, school evaluation, student testing policies, and instructional material selection procedures and the Department of Education is tightening the Framework-other policy linkages with time.

2. Course Requirements And Cross-Policy Consistency

The consistency of course requirements with other curriculum control policies is complicated by the internal inconsistency between the state Board of Education's and the

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[11] The mathematics textbook selection criteria are more specific in the General Mathematics textbook review. There is a 143 page textbook review guide; it evaluates textbooks in terms of the six areas addressed in the MCS and Framework. There is no corresponding guide for social studies textbooks at the high school level (Respondent 1).

[12] PACE stands for Policy Analysis for California Education. It has produced a number of documents regarding the progress of reform efforts in California, concentrating on the extent to which state reforms affect district, school and classroom practices.

[13] PQR is a process whereby trained reviewers use sixteen "Quality Criteria" (one-half related to the curriculum, one-half related to the school as a whole) to describe the extent to which school practices reflect those desired by the DOE.

legislature's requirements. For example, while the legislature requires only two mathematics courses of any kind, state Board of Education recommends three years of mathematics, including algebra and geometry. One of the main purposes of the Board of Education standards was to raise expectations for all students. Yet the legislature seems to at least tolerate wide variations in the expectations for some or all students. Any district could meet the legislated requirements by offering one year of arithmetic, and one year of consumer mathematics.

Since the state Board of Education recommends one year of algebra and one year of geometry for mathematics, there is greater harmony between the Framework's traditional college bound sequence and the state Board of Education recommendations. The other sequence is designed for the non-college bound (generic sequential courses that emphasize basic understandings in the six areas of the curriculum). Since this sequence does not require one year of algebra and one year of geometry, this sequence is at odds with the state Board of Education recommendations. Because the legislature requires only two years of mathematics to graduate, there is no particular relationship between either of the two sequences and the legislative requirements.

In History-Social Sciences there is greater internal consistency between the state Board of Education recommendations and legislative requirements. In History-Social Science, the state Board of Education recommendations and statutory courses are similar, especially since separate legislation in 1984 required one-half year of economics. Both the History-Social Science MCS and Framework describe courses in world history (Civilization), and U.S. History. The History-Social Science Framework also describes economics and rights/government courses. The Frameworks, text policies, CAP tests and school review programs rarely focus on connecting to specific courses. This leads me to conclude that graduation course policies are neither consistent nor inconsistent with other curriculum policies.

California's 1983 course requirements and recommendations policies specify particular courses and expected duration. The California Assessment Program tests, teacher certification and staff development, school evaluation, information system, and textbook policies show an indirect relationship to course requirements for graduation.

3. Student Testing And Cross-Policy Consistency

Of the two subject areas addressed in this study, mathematics and History-Social Science, the only high school test available is that for mathematics. In mathematics, the CAP test specifies the Framework-specific content, processes, and standards of competency expected on the test. Rationale and Content for Mathematics (RCM), a California Assessment Program publication, identifies several specific student competency standards and matching illustrative test items for each of the six areas that compose the state mathematics Framework: five content areas, and the one problem-solving area.

The test items prescribe the kinds of content and processes that the test expects of students. Such expectations are highly consistent with the stated goals of the Framework. The CAP test is also consistent with the Program Quality Review standards for school evaluation (especially those criteria dealing with the curriculum Frameworks). And, it is consistent with the quality indicators that form the primary basis for the Performance Report (see the section on the school evaluation for details). The mathematics part of the CAP test bases its questions directly on the Framework's categories of content, and problem-solving (CARCM, CASES). The eleventh grade CAP test connects with the curriculum by testing on problem-solving skills (25%) and the five content areas (75%). These are consistent with the problem-solving and content emphases in the Framework.

Since the main quality indicator in the Performance Report is the CAP test score, the CAP test is consistent with another part of school evaluation policies. CAP test scores are the only aspect of quality indicators that the California Department of Education monitors. Of all the quality indicators, only CAP scores are used to identify and give awards to exemplary schools. The California Assessment Program is an important element in school accountability, one of the two kinds of school evaluation policies in California.

In sum, the mathematics CAP test portion is highly consistent with respect to the goals of the 9-12 mathematics Framework goals. The California Assessment Program is most consistent with the Framework, but is also consistent with the quality indicators in the School Accountability Program

4. School Evaluation And Cross-Policy Consistency

Different elements of the school evaluation system align with different components of the curriculum systems. Program Quality Review links most tightly to the Frameworks. Quality indicators and related systems are most linked to CAP testing outcomes. None of the school evaluation systems are irrelevant to the Frameworks, since CAP tests reflect the content and process emphases of the Frameworks.

The Program Quality Review targets curriculum alignment. It teaches reviewers how to assess general program quality in eight subjects, including mathematics and History-Social Science, according to curriculum Framework standards (Model Curriculum Standards and Framework in mathematics; Framework in History-Social Science, not the Model Curriculum Standards). The Office of School Improvement also trains reviewers to recognize, measure and evaluate seven indicators of school quality. For these, reviewers look to student paths, integrated skills, instructional practices, special needs, student services, improvement processes, and the culture of the school.[14] In

[14] I will not describe these indicators here. However, these school effectiveness indicators contrast with those used by New York. Using the same "literature," different

comparison to other states, the Program Quality Review is unique in that it examines the extent to which the high school's program reflects the state mathematics and History-Social Science Frameworks. The potential for alignment of state and local curricula is great. State officials inside and outside of the Office of School Improvement believe that the Program Quality Review is a very influential source of alignment (Respondent 1, Respondent 6). Further evidence of its ability to align state with local curricula is found in a recent state review of the School Improvement Program. This latter indicates that School Improvement Program schools outperform non-School Improvement Program schools on the 5th and 11th grade CAP tests (Respondent 5, CASIPU).

Another major policy consistency lies between the Quality Review Program and the staff development program. Staff development and five other programs use the quality criteria, just like the Program Quality Review system. Schools planning staff development will have to show the state that their plans reflect quality criteria. At this point, how such consistency will be measured is under development. The legislature specifies that local staff development grants must be linked to existing curriculum Frameworks.

The programs that use Quality Indicators connect most directly with the CAP test. Because the CAP test is based on the Frameworks, Quality Indicator-based programs are linked to other curriculum policies. However, the PQR curriculum criteria more directly reflects the Frameworks than the Quality Indicators.

5. Teacher Certification/Development And Cross-Policy Consistency

Staff development, since SB1882, is explicitly linked to the curriculum Frameworks and to the school evaluation system. Staff development, to be funded by the California Department of Education, must be based on the Program Quality Review "quality criteria" (Respondent 5). These are based directly on the Frameworks, and form the central part of the Program Quality Review, the School Improvement Program, and other school evaluation systems described elsewhere in this study. SB1882 specifies one of these linkages by requiring the Superintendent of Public Instruction to:

> Ensure that procedures utilized by governing boards to approve and evaluate school development outcomes are consistent with this chapter, and with standards and criteria adopted by the state Board of Education, and include in existing program quality reviews an assessment of the quality of the staff development programs conducted at the state site (CASB1882).

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states define school effectiveness differently.

In short, the law requires conformity with Program Quality Review criteria. California Department of Education is now preparing rules to insure that staff development funds will be linked to quality criteria, school evaluation processes, and thus, to the curriculum Frameworks.

Consistency among the Frameworks, staff development and school evaluation policies encourage local districts to provide staff development in line with the state Frameworks. Linked as it is to school improvement (i.e., Program Quality Review) programs, California's coordinated state-funded, locally-oriented staff development as a tool to increase understanding and application of the curriculum Frameworks. The state encourages the use of the state Framework by tying the quality criteria based on each Framework to school evaluation and to staff development and the money associated with each program.

6. Instructional Materials And Cross-Policy Consistency

Textbook policies in mathematics and History-Social Science are generally consistent at the high school level with respect to the Frameworks. Each Framework lists criteria for text and other materials selection. In both the History-Social Science and mathematics Frameworks, one of these criteria is that texts present the central elements, goals, objectives or strands of the Framework. On a general level, both the mathematics and History-Social Science materials selection criteria express the overall messages of Frameworks: materials that encourage active student engagement, coverage of subjects in depth, the use of higher order thinking activities, and the incorporation of materials and methods that encourage the full participation of diverse ethnic, racial, gender and other groups.

Framework guidelines for textbook selection are linked to the general goals of each Framework, and they also include lists of criteria for materials selection that match those general goals. The History-Social Science Framework lists fifteen basic guidelines, twelve "organization of materials" guidelines, nine teacher manual guidelines, four student assessment guidelines, and at least ten guidelines for "instructional media." Especially in the fifteen basic guidelines, the reader can find repeated most of the seventeen characteristics of the Framework introduction. The mathematics Framework lists twenty-eight "overall standards" for mathematics textbooks (using most of the same categories as the History-Social Science Guidelines); about one-half of these standards contain sub-standards. The mathematics selection criteria closely reflect the main principles of the Framework. For example, the Framework calls for the use of "Situational Lessons" in which:

> situations should be complex enough so that several problems can be identified and pursued, a variety of approaches can be used, and the lesson can be studied over several class periods (CAFM, p. 15).

While materials selection criteria are consistent with respect to the overall goals of a Framework, they do not necessarily address materials for specific courses. The criteria, evidenced in sections of the Framework and in supplementary documents is Framework-consistent

7. Information System and Cross-Policy Consistency

CBEDS connects student course requirements and the information system. Its data allows the California Department of Education to monitor district course requirements and assess the extent to which students are meeting them. In this way, it resembles the New York and Florida educational data collection efforts. The data most closely linked to the Frameworks are those involving the California Assessment Program test, and the data collected along with the test itself (see student testing).

B. Prescriptiveness

1. Curriculum Guidelines

The California Framework documents are less prescriptive than the New York or Florida guidelines. One indicator of the difference in the level of curricular specificity is availability of course curriculum guides. Unlike New York, California presently provides no model curriculum guides at the high school level to aid teachers in teaching actual units according to the Framework. California devotes only part of its forty-five page mathematics Framework to the desired sequence of, and content and methods for, a particular mathematics courses.[15] The History-Social Science Framework gives 36 of its 117 pages to a general descriptions of high school courses. The History-Social Science unit is currently producing course models to give teachers more instructional guidance (Respondent 1).

Within the guidelines for mathematics and History-Social Science, different curriculum documents reflect variation in the level of and kind prescriptiveness. For example, the Model Curriculum Standards for mathematics are more prescriptive than the mathematics Framework. However, the History-Social Science Framework seems as or more prescriptive than the History-Social Science 9-12 Model Curriculum Standards;

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[15] By contrast, New York produces four documents covering each of the most widely-taken high school mathematics courses. Florida produces documents of varying prescriptiveness describing the behavioral objectives for every course that will meet graduation requirements. Florida provides about as many pages as California specifying behavioral objectives for all three ability levels of World History, American History, Economics and Government. By contrast, the New York syllabi cover the entire unit structures of every required and recommended social studies course 9-12 in four separate booklets (Global Studies, U.S. History, Economics, and Participation in Government).

but the two History-Social Science documents prescribe different things.

The mathematics Framework provides good examples of the contrasting amount of prescriptiveness in the 9-12 Model Curriculum Standards and Framework. The mathematics Framework lists seven concepts, or "strands" that should run through each course. One such strand is measurement. The Framework only lists the three general student competencies in measurement. The 9-12 Model Curriculum Standards, however, give examples for each of the three items on the list, and provides a sample problem to be solved using the problem-solving steps.

The History-Social Science Framework and 9-12 Model Curriculum Standards do not appear to differ as much in the amount of prescriptiveness, as in what they prescribe. The History-Social Science 9-12 Model Curriculum Standards prescribes the general skill objectives for all courses and content objectives for each course and lists content (concepts, facts, names) for each objective. The Model Curriculum Standards history courses cover the entire chronological period associated with each subject. Each course is organized by topics that cross time periods; topics are organized by key concepts, persons and historical facts.

In twenty-two pages, the United States history and geography section specifies five general topical areas of history, and 37 separate generalizations students should master; these contain specific list of concepts or content to be taught. An excerpt from the Model Curriculum Standards U.S. History "Growth and Change in America" section:

> A course should trace the rise of the city and deal with rural/urban tensions.
> -Inventions and technological unemployment in agriculture
> -Decline of available farmland, Urban America, the center for industrial giants and jobs
> -The increasing cultural pull of the city and rapidly growing rural-to-urban migration
> -Growth of suburban America, new cities

By contrast, the History-Social Science Framework is organized chronologically and high school history courses are limited to more recent history. For example, the World History course covers from the "industrial revolution" on; the U.S. History course covers the twentieth century.

The U.S. History part of the Framework organizes course objectives into nine chronologically-specific thematically-titled periods (i.e, "The Progressive Era"), four of nine being postwar themes ("Hemispheric Relations in the Postwar Era"). In eleven pages of prose, the Framework, instead of just listing learning objectives (people, events, concepts, and generalizations), also prescribes how students should interpret each chronological period or event. An excerpt from "American Society in the Postwar Era," in the U.S. History part of the Framework, prescribes what should be learned about the

Vietnam War:[16]

> The expansion of the war in Vietnam provoked anti-war protests that reflected and contributed to a deep rift within American culture. From within the protest movement, a "counterculture" emerged with its own distinctive style of music, dress, language, and films. When the war ended, the counterculture was absorbed in the mainstream (CAFSS, p.101).

The History-Social Science Framework offers general guidance on what to teach but less guidance on how to teach what the Framework envisions. History-Social Science and the CDE is now developing such guidance in the form of course models (Respondent 1). Since I have not seen them, I cannot speak to the level of prescriptiveness of these forthcoming course models.

In sum, the California curriculum guidelines are moderately prescriptive. The Frameworks lack prescriptiveness on the unit level. In mathematics, only Math A[17] gives guidance at the unit or lesson level (Respondent 2). History-Social Science is working on course models (Respondent 1). The extent of their prescriptiveness is presently unknown.

Table 2 indicates the overall prescriptiveness of California's curriculum guidelines according to the eight criteria listed in the introduction to the case studies. California guidelines seem most prescriptive on the general level, reflecting their emphasis on providing a new curriculum vision for mathematics and social studies.

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[16] The Model Curriculum Standards refers to Vietnam as part of an objective that specifies that "a course should help student evaluate the causes and effects of American military involvements" (CAMCS, HS-16).

[17] Math A is an innovative general mathematics course for high school students. It stresses higher order thinking and hands-on experiential learning of mathematical concepts. The manuals for Math A provide detailed information on what should be taught and how. They are very prescriptive.

Table 2 - Prescriptiveness of California's curriculum guidelines

Dimension of prescriptiveness	Extent of depth and breadth
Overall goals or mission of subject curriculum	high
Course objectives	low
Invariate course sequences	low
Unit objectives	none
Lesson structure & objectives	none
Lesson sequencing	none
Exemplary activities & teaching methods	low
Materials specified	low
Overall	moderate

2. Course Requirements

The 1983 Act requirements prescribe more courses for students than the state required in the previous fourteen years (when there were no state graduation standards). The state Board of Education recommends even more courses, including specific courses, than does the 1983 Act. This is especially true in mathematics. In both subject areas, neither the state Board of Education nor the legislature specifies in what sequences these courses must be taken. The 1983 Act requires that all schools must offer courses fulfilling California state university requirements (the statute does not list what these are); and a course of study leading to entry level business and industry employment (also unspecified) (p. 2126, Statutes of 1983). The 1983 Act does not prescribe what courses or sequence of courses might fulfill either requirement. Finally, the legislature also requires that all school districts develop alternative standards for students to meet the "prescribed course of study." These may include: "practical demonstration of skills and competencies, supervised work experience or other outside school experience, interdisciplinary study, independent study, and credit earned at a post-secondary institution" (p. 2125, Statutes of 1983). It is not clear whether the legislature is allowing local districts to replace graduation requirements with vocational experiences.

History-Social Science legislated requirements are more prescriptive than those in mathematics. In mathematics, any two courses will meet graduation requirements. Students must take the following History-Social Science courses: one year each of World History, Culture and Geography, U.S. History, and one semester each of U.S. government and economics.

The fact that all high school graduates are required to take U.S. History does not mean that the course must teach what the Frameworks prescribe. The fact that the Board of Education recommends more courses for graduation does not mean that more students are taking these courses. Requiring minimum graduation requirements is more prescriptive than no requirements at all, but less prescriptive than specifying the structure of the course to conform with California Department of Education Frameworks.

California's course requirements resemble those of Texas and Florida, but not New York. In mathematics, course sequences or particular courses remain unspecified. In History-Social Science, courses are listed without a sequencing specification.

3. Student Testing

The CAP mathematics test examines student understanding of the core concepts of mathematics. The CAP test specifies the Framework-specific content, processes, and standards of competency expected on the test. Rationale and Content for Mathematics (RCM), a California Assessment Program publication, identifies several specific student competency standards and matching illustrative test items for each of the five content areas, and the one problem solving area (together the six areas that compose the state mathematics Framework). For example, the twelfth grade mathematics RCM identifies four aspects of mathematics problem solving: problem formulation, the selection and use of analytic strategies, the interpretation of solutions, and the solving of non-routine problems. All except the last item the Framework specifies as the main elements of mathematics problem solving. For each area, the RCM lists a behavioral description of what the student should be able to do followed by "illustrative test items." An example of problem formulation and an accompanying illustrative test item is listed in Table 3.

Table 3-Example of Problem Solving From the Rational and Content for Mathematics

Reporting Category	Description of Category	Test Items
Non-routine Problems	The student will solve problems involving both algorithmic and non-algorithmic procedures, such as pattern recognition, inductive reasoning, extension of concept, and simulation; e.g., geometric or numerical modeling or probalistic situations (Examples 8, 9)	A cardboard piece shaped as an equilateral triangle with side 6 cm is rolled to the right a number of times. If the triangle stops so that the letter T[18] again in the upright position, which of the following distances could it have rolled? * 24 cm * 30 cm * 60 cm *90 cm (CARCM, p. 6)

The test items prescribe the kinds of content and processes the test expects of students. Such specificity of expectations probably gives mathematics teachers a clear idea of the kinds of standards by which the mean school-level understanding of high school mathematics principles will be evaluated.

The eleventh grade test examines student knowledge of concepts and skills associated with courses commonly offered at the high school level. It does not examine mathematical knowledge on a course by course basis, as do the New York Regents and competency tests. The New York tests examine student course knowledge at the end of the year in which the student takes the course. The California tests measure student learning across a four year span. Since students take the CAP test in the eleventh grade, and may not have had a mathematics course since the tenth grade (only two years required), the test may measure either students understanding of the subject when students took the course or what they remember about the subject or both.

[18] The problem uses an illustration, and the letter T is in the illustration.

While the eleventh grade mathematics CAP test portion does not necessarily examine all twenty criteria identified, test items are grounded in the criteria found in the Mathematics Framework. The RCM intends to assist teachers in instruction that will help their students perform better on the CAP mathematics portion.

4. School Evaluation Systems

With respect to the Frameworks, the Quality Criteria Policy more directly prescribes Framework elements than the Accountability Policy. The Accountability Policy is prescriptive with respect to the elements of the Frameworks, through its indirect reinforcement of the CAP test (itself a measure of how much local schools teach the curriculum).

The Program Quality Review program focuses on the general principles of each subject Framework, by applying the "Quality Criteria for High Schools." These criterion essentially restate the Framework goals (and other indicators of school effectiveness) in more observable qualitative phenomena. The extent to which any Program Quality Review will examine each of the criteria for every subject may vary according to the time and staff available for each review.

High school "quality criteria" guides for History-Social Science include several characteristics of an effective (and its opposite, ineffective) program. For example, in History-Social Science, in accordance with the Framework's prescription of teacher use of literature to bring the past to life, an effective History-Social Science practice is evident when:

> teachers bring the past to life through the use of literature of and about the period of history being studied enabling students to relate to the lives of people in other times and places (CAQCHS, p. IV-23).

A corresponding undesirable practice is supposedly present when:

> Teacher rely primarily on the text and their lecture materials in their presentation of history. Literature is not included as an integral part of the program (CAQCHS, p. IV-23)

The subject program criteria (based directly on Framework goals), constitute about one-half of the total quality criteria. The program criteria make Framework goals into more specific phenomena observable in departmental practice or classroom instruction. There is a good deal of prescriptiveness in the Program Quality Review program with respect to Frameworks.

5. Teacher Certification and Staff Development

The California state requirements for preliminary certification to teach history-social studies and mathematics in high school contain several provisions with multiple options: a bachelors degree minimum, completion of a teacher preparation program, a course in the U.S. Constitution, a course on the teaching of reading, demonstration of English proficiency, and subject matter competence.[19]

While California prescribes more than New York, California does not prescribe that teachers know anything about the state's particular curriculum Framework. Since new state-influenced staff development is still under "development," most of my comments are based on present and projected practice (from phone interviews with California Department of Education officials) as well as a reading of SB1882. Prior to SB1882, Program Quality Reviews included an assessment of quality criteria for subject programs by examining the matches between Frameworks and local practices, with staff development activities to address deficiencies (Respondent 6, Respondent 5). (See the school evaluation section for more information on quality criteria and Program Quality Reviews.)

6. Instructional Materials Policy

Textbook policies in mathematics and History-Social Science are variably prescriptive at the high school level with respect to the Frameworks. Each Framework lists criteria for text and other materials selection. On a general level, both the mathematics and History-Social Science materials selection criteria express the overall messages of Frameworks: materials that encourage active student engagement, coverage of subjects in depth, the use of higher order thinking activities, and the incorporation of materials and methods that encourage the full participation of diverse ethnic, racial, gender and other groups.

Framework guidelines for textbook selection include lists of criteria for materials selection that match general goals. The History-Social Science Framework lists fifteen basic guidelines, twelve "organization of materials" guidelines, nine teacher manual guidelines, four student assessment guidelines, and at least ten guidelines for "instructional media." Especially in the fifteen basic guidelines, the reader can find repeated most of the seventeen characteristics of the Framework introduction. For example, the Framework prescribes the teaching of history as a "well told story." The material selection guideline matching this follows:

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[19] California shares credential reciprocity with several other states, including New York.

2. Instructional materials should present history as an exciting and fascinating story as do books and films that are prepared for a general audience. The difference between student and a general audience is that a general audience is not compelled to read boring material; students often are. Materials that students can read (or view or use) with interest, enthusiasm, and pleasure are needed. The materials for the classroom should compare favorably with the books, magazines, software, and educational television programs that are available to students outside school (CAFHSS, P.115).

The mathematics Framework lists twenty-eight "overall standards" for mathematics textbooks (using most of the same categories as the History-Social Science guidelines); about one-half of these standards contain sub-standards. Most of these guidelines describe materials that encourage appealing to diverse student abilities, and encouraging student inquiry, reflection and problem solving; nine of the twenty-eight descriptors specify content-related criteria.

The mathematics selection criteria closely reflect the main principles of the Framework. The textbook selection criteria prescribe:

> Assignments based on the textbook satisfy the following:
>
> 19. Each set of problems requires a variety of operations or solution techniques or both.
>
> 21.Previously learned skills are reinforced through problems that require their use in new situations.
>
> 24.The student is often directed to activities outside the textbook, such as:
>
> a. Obtaining data from real situations
>
> b. Developing computer programs from information in the textbook (CAFM, p.20)

While materials selection criteria are relatively specific, they do not necessarily address materials for particular courses. California Department of Education's guidance on materials for high school courses varies by course. Guidelines on materials selection for some high school courses are either completely lacking, or minimally descriptive. For example, there are no formal guidelines for instructional materials for any high school mathematics course except General Mathematics.

Similarly, in its Recommended Books and Historical Literature guide (marked "draft"), History-Social Science offers minimal guidance to high schools selecting materials for U.S. History and World Civilization. For example, the idea of using literature to teach history is a major characteristic of what the History-Social Science Framework claims is a good History-Social Science curriculum. The History-Social Science "guide" to literature lists enrichment literature appropriate for courses through grade eight. Some

courses at the high school level list no literature or a few selections (grade nine electives, economics, principles of democracy). The two history courses (U.S. and world) list more suggestions, but some suggestions are minimally specific, as the following excerpt from the U.S. History part of the History-Social Science "literature guide" Jazz Age section highlights:

> The Jazz Age
> Biographies of:
> Coolidge, Calvin
> Harding, Warren
> Hoover, Herbert (CARBHL, p.57)

Apparently, forthcoming course models will provide more specific sort of advice about materials at the high school level (Respondent 1).

The mathematics section has reviewed only texts for General Mathematics and Math Analysis (not yet published). The review of secondary General Mathematics texts uses the mathematics content and teaching guidelines (including emphases on problem-solving, the use of calculators and so on) to evaluate 18 textbooks by major publishers. The reviews give teachers a description of the extent to which these texts meet the Framework guidelines. However, there are no guides for Algebra I or II, Geometry, three of the most widely taken courses.[20]

The criteria, evidenced in sections of the Framework, and in supplementary documents, are variably prescriptive. In comparison to the guidelines for the K-8 materials, the high school guidelines are less prescriptive. In comparison to the pre-1983 guidelines' almost complete lack of guidance, the textbook policies are much more prescriptive with respect to the Frameworks. History-Social Science reports moving toward greater specificity in materials recommendations.

7. Informational System

CBEDS does not appear to be designed to augment a curriculum control policy. Its data allows the California Department of Education to monitor district course requirements and assess the extent to which students are meeting them. Thus, it is minimally prescriptive with respect to the curriculum Frameworks.

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[20] There will not be any for these courses. The new Framework for mathematics will abolish all of these traditional courses in favor of a recurring concept model of mathematics instruction like Mathematics I-II-III in New York (Respondent 2).

C. Authority

1. Curriculum Guidelines

Formal and expert authority underlie both the History-Social Science and mathematics curriculum guidelines. Because the 9-12 Model Curriculum Standards result from a legislative act, the standards they set forth carry at least the indirect formal and legal authority of the legislature. The mathematics Framework gains more authority from its close association with its Model Curriculum Standards, but the History-Social Science Framework/Model Curriculum Standards differences undermine the formal authority of the History-Social Science Framework. Since many experts helped to create the Model Curriculum Standards and Frameworks, their guidelines also reflect the authority of subject expertise. Both the mathematics and History-Social Science Frameworks mostly appeal to expert and charismatic authority. Both sets of guidelines appeal to reject normative and traditional authority.

Expert authority underlies both the mathematics and History-Social Science guidelines. Both the 9-12 Model Curriculum Standards and Frameworks documents list several persons one might expect would be experts in mathematics and History-Social Science subjects: university professors, classroom teachers, private subject-oriented organizations, and representatives of state and national subject organizations. The latter experts are well-represented on the 9-12 Model Curriculum Standards committees. For example, History-Social Science guidelines reflect recommendations in the recently published Bradley Commission report, the recommendations of the National Council on History Education, and the American Historical Association. Likewise, the mathematics guidelines reflect the recommendations of the National Council of Teachers of Mathematics and its state affiliate. The Frameworks committees use similar types of experts.

Unlike the Model Curriculum Standards, the Frameworks may reflect the charismatic and expert authority of the Superintendent of Public Instruction. California Department of Education officials describe the Superintendent as well-informed about curriculum issues and politically effective in California educational politics (Respondent 2, Respondent 1). One official noted that the Superintendent has effectively used his office to make the curriculum Frameworks the actual centerpiece of most state educational initiatives (Respondent 2).

Both the mathematics and History-Social Science guidelines appeal to and reject traditional and normative authority. Because they propose major changes in their respective curricula, both guidelines lack normative and traditional authority. Yet because the course offerings remain similar to those offered in most high schools, the guidelines reflect tradition and common practice. For example, the mathematics Framework leaves largely undisturbed two structures: the basic traditional high school mathematics course offerings (Algebra I, Geometry, Algebra II/Trigonometry); and the

two-tier system of courses for the college and non-college bound (Math A-C for the non-college bound, and Algebra-Geometry-Algebra II-Advanced Math for the college bound). However, the mathematics guidelines promote a noticeably different way of teaching the subject. Unlike most states, California guidelines advocate the teaching of logic, probability, algebra and geometry to all students, regardless of ability. Furthermore, the mathematics Framework specifies that the same teaching emphases guide both college and non-college preparatory sequences. These include: focusing on problem-solving, using calculators, choosing computational strategies that work, estimation and mental arithmetic, using computers and maintaining high expectations for student success. The mathematics Framework includes traditional and commonly taught subjects, while setting new directions in its core of concepts and its innovative teaching practices. As a result, the California mathematics guidelines both reflect and reject normative and traditional authority.

The History-Social Science guidelines both appeal to and reject traditional curriculum in social studies. Guidelines describe the teaching of world history, American history, and government; most U.S. high schools offer such courses. However, the History-Social Science Framework departs from tradition and common practice in social studies by its lack of congruity with past Frameworks, (both 1975 and 1981), the Model Curriculum Standards, and current course content in most states. Its curriculum strands approach, its almost exclusive focus on history, its emphasis on a particular interpretation of history (chronological and consensual), its emphasis on chronology by grade level, and its emphasis on depth over breadth in the social studies curriculum all depart from common practice. These departures tend to diminish the normative and traditional authority of the History-Social Science Framework.[21]

While both guidelines draw on expert authority and charismatic authority in similar ways, the authoritative appeal of the two guidelines differs considerably. However, the mathematics guidelines have a stronger base in formal/legal authority, and also in common practice and tradition, than the History-Social Science guidelines. This state of affairs may be temporary. Interest in and acceptance and authority of California's History-Social Science Framework may be increasing. California is now in its 4th printing of this Framework; over 50,000 copies have been distributed.

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[21] The move from a social sciences Framework to the 1988 History-Social Science Framework took place over a longer period than I initially suspected. From 1976 to 1981, the Framework switched its name to History-Social Sciences. However, the 1981 Framework emphasized a strong supporting role for social sciences in a history program. Furthermore, it still listed course descriptions for Anthropology, Sociology and other social sciences courses. The 1988 Framework states very strongly its emphasis on history as the central content of the curriculum; it does not list descriptions for any high school social science electives previously identified in the 1981 Framework.

Whether the curriculum guidelines possess sufficient authority to make their application more likely is unclear. Both the mathematics and History-Social Science guidelines reject a good deal of normative and traditional authority. However, the guidelines' appeal to expert and charismatic authority are strong. With time and dissemination efforts, California curricular guidelines may gain increasing acceptance as direction for teaching practice.

2. Course Requirements

The new course requirements reflect the formal and traditional authority of the state to require minimum graduation requirements. After fourteen years of benign neglect of graduation standards in the Proposition 13 era, the new state Board of Education and legislative initiatives reflect a re-establishment of the traditional authority of the state to set graduation standards. However, the temporal proximity of legislative mandates and similar state board recommendations in California educational reform was unusual and potentially confusing. Generally, the course requirements are based on a high level of legal authority.

3. Student Testing

Like many other curriculum control policies in California, the CAP test in mathematics derives its authority from the legislature's 1983 Education Act. In addition, the mathematics test reflects the expert subject authority of the advisors to the California Assessment Program. The mathematics test guide lists nineteen advisors, three of which are national experts in mathematics education; others are from California school district subject department offices or California colleges. A separate committee of state university and secondary school subject experts, the Mathematics Assessment Advisory Committee, worked to develop the questions in the test. CAP tests appeal to expert and formal authority the most. Generally, the state student testing policy is authoritative.

4. School Evaluation Policies

The Office of School Improvement argues or implies that the expertise of its training, its criteria, and its review methods have encouraged the widespread application of PQR criteria. Clearly, many high schools use the PQR process for self-study and external review over a three to six year period. If over 90 percent of high schools use some form of PQR, these appeals to authority may be effective.

The programs based on the Quality Indicators of Excellence implies a different appeal: to tests as proxies of objective and reliable expert authority independent of local practice. These programs also draws more on the formal authority of the state to use CAP tests to assess the strength of the curriculum.

5. Teacher Certification/Development Policies

Staff development in California appeals to expert and normative authority. In addition, SB1882 lends legal authority to staff development. The California Department of Education supplements this authority with monetary incentives to encourage improved knowledge and application of the curriculum Frameworks.

Two aspects of the state-influenced staff development/school improvement encourage normative authority. First, most of the staff development money goes to the local level, encouraging local adaptations of policies. Second, the location of staff development facilities is designed to meet the local needs of teachers. Local consortia (level two) and the regional university-based regional subject project centers rely heavily on the involvement and consent of classroom teachers in planning and training.

The appeal to expert authority is based on the Framework-based training, directed by university and secondary subject experts in the training. The third tier of staff development contains university-based, teacher-influenced programs designed to find practical methods of implementing Framework goals (Respondent 5). In History-Social Science, for example, teachers will receive direct help in developing units and lessons for the courses promoted by the Frameworks (Respondent 1).

6. Instructional Materials Policy

The materials selection policies directly reflect the authority of the Frameworks and the reader will remember that the Frameworks mainly appeal to expert authority, though that appeal is strengthened by the legal authority of state educational reform legislation (SB 813 and SB 1882). Neither the mathematics nor History-Social Science Frameworks appeal much to traditional or normative practices and goals.

Textbook publishers tend to rely on the normative and traditional authority when deciding what to publish. If the majority of their market teaches mathematics or social studies in a particular sequenced structure, publishers tend to publish textbooks reflecting that. Since both the History-Social Science and mathematics Frameworks and their respective selection criteria are pioneering efforts, they may make it difficult for state teachers to find published materials for their subjects that match the Frameworks. There is already some evidence of this in the K-8 selection process. The California Board of Education rejected all fourteen K-8 mathematics textbooks for failing to meet Framework criteria in understanding, problem-solving, and number sense (Honig, 1989, p. 3). Recently, California's textbook selection policies have been successfully challenged in the courts. There may be more trouble ahead. Anticipated elimination of traditional high school mathematics courses and their replacement with concept-oriented I-II-III sequenced courses are likely to depart from common practice even more substantially (Respondent 2). However, by the time California adopts a I-II-III mathematics system, schools may find textbooks made for the New York I-II-III sequence already available.

Similar authority problems may arise or have arisen in History-Social Science materials. For example, the History-Social Science Framework departs substantially from the common practice of teaching all of U.S. History (instead of just twentieth century) and all of world history (instead of the European "industrial revolution" onward) at the high school level. Furthermore, by recommending that materials conform with about fifty Framework-specific guidelines, may make it unlikely that any one material will meet all of the History-Social Science standards. However, at the present time, two publishers (Glencoe/MacMillan and Houghton-Mifflin) produce textbooks designed to accommodate the History-Social Science curriculum Framework's chronological scheme. I do not know to what extent either textbook reflects other aspects of the Framework.

Finally, many of the particular standards California has devised for History-Social Science texts do not reflect common textbook writing standards. For example, most textbooks will not meet the History-Social Science specification requirement that instructional materials should "present history as an exciting and fascinating story as do books and films that are prepared for a general audience" (CAFHSS, p. 115). Nor will most present history textbooks "pay close attention to ethical issues" (CAFHSS, p. 116). However, the most stringent specifications concern the format of instructional materials, namely that "Textbook publishers in particular should be encouraged to adopt formats other than a single, heavy hardbound book. Books of several hundred pages can be daunting to students" (CAFHSS, p. 117). Such specifications do not reflect current or past expectations for history textbooks, and therefore reflect the lack of normative and traditional authority in the national scene. Whether the charismatic authority of the superintendent and the expert authority to which the Frameworks appeal overcomes the obstacles posed by the lack of normative and traditional authority in the Framework and selection criteria remains to be seen. In comparison to the guidelines for the K-8 materials, the high school guidelines are less authoritative. In comparison to the pre-1983 almost complete lack of guidance, the textbook policies are much more authoritative with respect to the Frameworks.

7. Informational System

CBEDS allows the California Department of Education to monitor district course requirements and assess the extent to which students are meeting them. Thus, it is minimally authoritative with respect to the curriculum Frameworks. In this way, it resembles the New York and Florida educational data collection efforts.

D. Power

1. Curriculum Guidelines

The power of any of the guidelines is minimal. By law and by tradition, the state may not impose curriculum standards on local schools or districts. As a result, there are no direct incentives that depend on schools or districts adopting the curriculum.

Students' graduation from high school or their admission to college does not depend directly on their knowledge of the information specified by the guidelines or measured in state tests. While districts are required to review their local curricula in light of the state 9-12 Model Curriculum Standards, they are not required to compare their curriculum to the Frameworks, or to adopt the state Frameworks. Most schools are evaluated by local or regional groups who use state guidelines. However, there are no direct positive or negative consequences for any districts or high schools that fail to adopt the state-sponsored curriculum (see the discussion of new staff development money and its potential indirect effect on curriculum).

First, the California Department of Education lacks the power to insure that local districts, schools or teachers use the Frameworks with students. The Department of Education works to stimulate local adoption of state policies but it has no means of insuring that policies will be adopted at the school level. If schools choose to ignore CAP test results, they may do so without explicit state sanctions. Instead, at the high school level, the California Department of Education attempts to encourage such usage through other policies that have more rewarding or sanctioning clout: CAP tests, publication of Quality Indicators by school, funding for special programs, and school review programs.

2. Course Requirements

Two state sanctions back the authority of the 1983 Act's graduation requirements: the possibility of withholding of state aid, and the possibility that students will not graduate from high school. Schools that fail to conform with the legislature's graduation requirements may not receive their state aid portion (I do not know if this has ever happened). Withholding graduation from students who do not meet state standards further emphasizes the power of legislated requirements. There are no sanctions or rewards connected with meeting state Board of Education recommended graduation standards. Annual performance data for the state reveals that all districts have adopted the required standards but not the recommended Board of Education standards. However, although the California Department of Education monitors and reports school progress toward the recommended standards (in the annual Performance Report), there are neither direct sanctions nor rewards for school districts or schools that adopt the state Board of Education recommendations. Generally, the course requirements have a high level of power.

3. Student Testing

The power of the CAP test is mainly in how it is used to draw public attention to the relative rankings of the school vis-á-vis other schools in the state. The California Department of Education uses the CAP tests to describe student achievement in every school and every district. The state produces an annual school Performance Report that compares district to state CAP test scores. The schools, the school district and the local

media receive a copy of the Performance Report. Evidently, local school districts take the CAP test results seriously. At the present time, the top 10-15 percent of CAP-scoring schools receive public awards at an annual ceremony. Publicity surrounding the event is substantial, one state official calling it a "big deal" (Respondent 3).

The real power of CAP tests depends on several factors two of which are the following: the sophistication of district level officials who interpret the results and suggest changes in programs; and the extent to which local newspapers understand and highlight the results of the CAP test. In districts that can afford statistically-knowledgeable staff located near a newspaper with large staffs, Performance Reports can have a more powerful effect on public opinion than in areas where these conditions are not met (Respondent 3). Their power derives in part from the manner in which norm-referenced results permit school/state comparisons and result in positive or negative publicity for schools. The state student testing policy in mathematics is generally powerful.

4. School Evaluation Policies

Since the California Department of Education is not allowed to make local districts adopt the Frameworks, it cannot require that school evaluations result in Framework adoption. Formally, no law or code requires that the California Department of Education evaluate school's adoption of or use of the state-approved Frameworks. Nor does the Office of School Improvement desire to make schools use Program Quality Reviews. Instead, Office of School Improvement officials express the opinion that voluntary application of Program Quality Reviews is superior to any state-mandated school monitoring system (Respondent 5, Respondent 6). Also, according to the official Program Quality Review documents and interviews with officials, the Office of School Improvement hopes that schools will adjust the state criteria to fit local practices and conditions.

Each of the evaluation systems provides incentives for compliance. School Improvement Program schools get, and soon schools establishing Program Quality Review-based staff development plans will get, money from the state to engage in the programs. Schools that do well on CAP tests get awards and receive positive local publicity.

There are no state sanctions for schools that fail to meet Program Quality Review standards or whose students do very poorly on CAP tests and other indicators. School Improvement Program high schools will continue to receive money (about $78 per student) from the state regardless of their external reviews (Respondent 5). New staff development monies ($15 of $20 million dollars) go to schools and regional consortia whose plans promise to improve school performance on the quality criteria. It is not yet clear how the California Department of Education plans to assess this. The state may have copies of Program Quality Review site reviews on file, but it has no authority or

power to act on these reports. The California Department of Education may be able to monitor local school quality indicators performance and issue awards, but it has no authority or power to induce changes in the extent to which schools apply the Frameworks.

The state has no power to evaluate schools. The lack of sanctioning or rewarding power causes the California Department of Education to rely on persuading local districts to use Program Quality Review criteria in the three-year evaluation and on the use of publicity through the annual Performance Report.

5. Teacher Certification and Staff Development

SB1882 lends power to staff development. The California Department of Education makes monetary incentives to encourage improved knowledge and application of the curriculum Frameworks. Most of the staff development money goes to the local level, encouraging local adaptations of policies.

6. Instructional Materials Policies

There is no intrinsic power in the materials selection policies for high school courses. High schools can use any materials they choose without rewards or sanctions from the California Department of Education. Furthermore, by recommending that materials conform with about fifty Framework-specific guidelines, it may be unlikely that any one material will meet all of the History-Social Science standards. Also, many of the particular standards California has devised for History-Social Science texts do not reflect common textbook writing standards. For example, most textbooks will not meet the History-Social Science specification requirement that instructional materials should "present history as an exciting and fascinating story as do books and films that are prepared for a general audience" (CAFHSS, p. 115). Nor will most present history textbooks "pay close attention to ethical issues" (CAFHSS, p. 116). Moreover, the most stringent specifications concern the format of instructional materials, e.g., formats other than a single, heavy hardbound book. While the criteria for the selection of all History-Social Science materials are the same, only at the K-8 level do the criteria take on the power associated with state-approved adoption.

7. Informational System

CBEDS connects student course requirements and the information system. Because CBEDS allows the California Department of Education to monitor district course requirements and assess the extent to which students are meeting them, it is minimally powerful with respect to the curriculum Frameworks.

IV. CONCLUSIONS

It is difficult to summarize the strength of the mathematics and History-Social Science curriculum guidelines within the California educational policy system. Several factors make summarizing curriculum policy strength difficult. The rapid changes in state educational policy already underway and soon to be underway make any summary transitory. After talking to several state officials, I was impressed by the future-oriented and rapidly evolving situation in many aspects of curriculum reform. For example, the History-Social Science section plans to revise the Model Curriculum Standards to conform to the Framework, provide guidance on specific textbooks, to finalize the new History-Social Science part of the California Assessment Program test, to revise teacher certification in History-Social Science, and to build new types of tests to measure higher order thinking in History-Social Science. The mathematics section was revising its Framework to bring it into line with National Council of Teachers of Mathematics standards, was disseminating an innovative Math A program to teachers across the state, and was working to revise CAP tests to reflect an emphasis on hands-on, authentic problem-solving. Major plans to revise the entire nature of the CAP test make any conclusions about guidelines and student testing tentative. In fact, when I called to get basic information on the CAP test, I was told to attend a conference at which major revisions to the CAP test (to make it more "authentic," and reflect higher order thinking better) would be discussed. In short, according to state education officials, sweeping changes were underway.

Nonetheless, some generalizations are in order. First, many of California's curriculum policies are consistent with each other and the Frameworks. The California Department of Education works consciously to make the Frameworks the basis for all other educational policies. The Frameworks are reflected in staff development, school evaluation, student testing policies, and instructional materials selection procedures and the Department of Education is tightening the Framework-other policy linkages with time. This constitutes a major change from the days of more separate and isolated curriculum initiatives and programs.

Despite major moves to link curriculum policies explicitly to the state guidelines, several things minimize the strength of California curriculum policies: they lack prescriptiveness on the school or teacher level and authority or power or both are sometimes lacking.

First, the Frameworks seem to lack prescriptiveness on the unit level. This situation may be changing. For example, Math A seems to be an exception to this generalization; exemplary materials and teaching suggestions provide teachers with instructional guidance more specific than the brief description of Math A in the Framework. Also, History-Social Science is working on course models to give teachers more guidance on the content and methods for particular courses at the unit level, through the development of "course models" (Respondent 1).

Second, whether the curriculum guidelines possess sufficient authority to make their application likely is unclear. California mathematics and History-Social Science guidelines appeal to expert, nationally respected, subject authorities. These authorities advocate a vision for a curriculum that implicitly or explicitly rejects common practice. Both the mathematics and History-Social Science guidelines reject a good deal of normative and traditional authority. The History-Social Science Framework makes major changes in the social studies curriculum, minimizing its appeal to normative and traditional authority. Furthermore, the two sets of History-Social Science guidelines appeal to different authorities. The legally authoritative Model Curriculum Standards appear to have been superseded by the Framework. The latter is based on the expert and charismatic authority. Yet unless the legislature has rejected the Model Curriculum Standards, there remains implicit competition between the Model Curriculum Standards and the Framework. Whether the charismatic authority of the State Superintendent and the expertise of state curriculum developers is sufficient to encourage widespread application of the pioneering curriculum is a question better answered by the field study portion of this project.

Third, the California Department of Education seems to lack the power to insure that local districts, schools or teachers use the Frameworks with students. The Department of Education works to stimulate local adoption of state policies but it has no means of insuring that policies will be adopted at the school level. The closest indication of curriculum following are the Program Quality Reviews. In a Program Quality Review, site visit reports are filed with the Office of School Improvement but these indicators of alignment are not examined systematically, but it is unknown to what extent such reports result in state sanctions or rewards. CAP test information is known by California state Department of Education, yet, if schools choose to ignore CAP test results, they may do so without clear state sanctions. While the state uses incentives and funding formulas to encourage the application of the Frameworks, and trains many evaluators with the state-approved PQR system, ultimately the state continues to give funds to schools whether or not they use the state Frameworks, or whether they use them well or poorly.

Instituting major changes in the mathematics and History-Social Science curricula on the local level presents a challenging task. In a state where local autonomy is highly valued and the state legislature proscribes imposition of a state curriculum, getting schools to teach what the guidelines prescribe may be difficult. While it is moving rapidly in the direction of linking the Frameworks and other state policies, the Department of Education relies on local schools to determine the extent to which they are implementing the curriculum. The Department of Education uses staff development money and school evaluation to encourage a general and practical application of the Frameworks. And it revises the California Assessment Program tests to reflect Framework goals from kindergarten to twelfth grade. Such efforts may have at least two very different results. One result (the intended one) may be that state curriculum guidelines become accepted as useful, progressive, authoritative and practical sources for district curriculum and teaching practice. A less happy outcome might be that local applications, misapplications

and lack of applications of state guidelines will result from the lack of power and authority in the guidelines, and the disparities among different curriculum guidelines documents.

As the most widely administered student testing mechanism in California, CAP tests measure the extent to which school programs effectively teach the concepts and practices inherent in the Frameworks. Since the History-Social Science portion of the 11th grade CAP test, and the Rationale and Content for History-Social Science are not yet available, it is unknown to what extent these two will be consistent. The mathematics CAP test portion is highly prescriptive and consistent with respect to the goals of the 9-12 mathematics Framework goals. A mathematics teacher reading the Rationale and Content for Mathematics could anticipate the kinds of questions that would measure his students' understandings and prepare lessons with similar questions in mind. The California Assessment Program is most consistent with the mathematics Framework, but is also consistent with the quality indicators in the School Accountability Program (see discussion in the school evaluation section). CAP tests appeal to expert and formal authority, and their power derives in part from the manner in which norm-referenced results permit school-state comparisons and result in positive or negative publicity for schools.

The state student testing policy in mathematics seems relatively prescriptive and consistent, authoritative and powerful. However, the CAP test is criticized by other state education officials who have called for test questions that are "performance-based," or "authentic" tests of the problem-solving and other higher order thinking both Frameworks recommend. These officials would like to see multiple choice questions replaced by test items that involve student demonstration of higher order thinking on actual problems relevant to each discipline. According to recent (1991) evidence, CAP is beginning to incorporate such assessment in upcoming versions of the test (Respondent 1, Respondent 2).

California has no authority or power to evaluate how well local schools or teachers follow state curriculum Frameworks. Instead, California encourages Framework compliance by providing a system of criteria and training school evaluators (the Program Quality Review quality criteria); by assessing program effectiveness through student tests and monitoring and reporting aspects of school performance of likely interest to the public (accountability quality indicators); and by providing incentives connected with the application of the Program Quality Reviews, and the performance on CAP tests and other quality indicators. The consistency between the Program Quality Review and the Frameworks is considerable, partly due to the prescriptiveness of the Program Quality Review with respect to Frameworks. The quality indicators and the Frameworks are indirectly related through the California Assessment Program test link. None of these policies are disconnected from each other. Yet, despite the requirement that all districts compare their curriculum to that recommended in the Frameworks, the state has not provided the CDE with direct sanctions or rewards for the enforcement of such a

requirement. Nor has the legislature or the CDE established standards that specify how close local curricula must be to the state criteria. Locals are legally required to compare, not conform.

Consistency among the Frameworks, staff development and school evaluation policies encourage local districts to provide staff development in line with the state Frameworks. Linked as it is to school improvement (i.e., Program Quality Review) programs, California's coordinated state-funded, locally-oriented staff development can be a tool to increase understanding and application of the curriculum Frameworks. The state encourages the use of the state Framework by tying the quality criteria based on each Framework to school evaluation and to staff development and the money associated with each program. Staff development is not completely state-controlled, but the legislature and the Department of Education have managed to make it more likely that districts will examine staff development needs in light of the state Frameworks.

While California recommends criteria for the selection of high school History-Social Science and mathematics materials, it does not require that any school district use them. The criteria, evidenced in sections of the Framework and in supplementary documents, represent Framework-consistent, but non-binding and variably prescriptive, advice from California Department of Education subject units. In comparison to the guidelines for the K-8 materials, the high school guidelines are less powerful. In comparison to the pre-1983 almost complete lack of guidance, the textbook policies are much more prescriptive, authoritative, and consistent with respect to the Frameworks. In comparison with New York's lack of guidance on instructional materials, California's materials guidelines are more substantial. In comparison with Florida's highly prescriptive, consistent, authoritative and powerful selection criteria and processes for high school instructional materials, California's guidelines are less substantial.

Table 4 summarizes the findings of the California case study. California's strongest policy areas are student tests and course requirements. The weakest areas are the informational system and instructional materials.

Table 4-Overall policy strength of California curriculum control policies

Policy	Consistent	Prescriptive	Authority	Power
Curriculum Guidelines	high	moderate	expertise (e, m) charisma (i) law (m)	none
Course Requirements	moderate	moderate	law (e)	high (s)
Student Tests	high	moderate	law (e) expertise (i)	low (r)
School Evaluation	high	high	law (e) expertise (e)	low (r)
Teacher Certification/Staff Development	low	N/A	law (e)*	low (r)
Instructional Materials	moderate	low	norms (i) expertise (e)	none
Informational System	high	low	law (e)	none
Overall	high	moderate	low	low

e=authority explicitly stated in documents or interviews
i=authority implicit in policies or implementation of policies
m=documents or interviews show mixed or inconsistent authority appeals
*=authority given mainly to higher education institutions
s=sanctioning power
r=reward power

Abbreviations for California Case Study

CA1983	The California Reform Act of 1983, sometimes called SB813
CAPRA	California Annual Progress Report-entire state
CAAPR	California Annual Progress Report from one school
CAMCSREV	California evaluation of the effect of the Model Graduation recommendations
CASB1882	California Senate Bill 1882 establishing a unified staff development system; called Chapter 1362 of the laws of 1989.
CAQCHS	California Quality criteria for High Schools
CASIPU	California School Improvement Program Update
CASFHSS	California History-Social Sciences Framework
CAFM	California Mathematics Framework
CAMCS	California 9-12 Model Curriculum Standards
CATHSS	California Materials Selection Guide
CASIPREV	Review of California's SIP program
CASAS	Survey of Academic Skills-a CAP test
IMFA	Instructional Materials and Framework Adoption: Policies and Procedures (1988)

THE STRENGTH OF FLORIDA CURRICULUM CONTROLS

THE STRENGTH OF FLORIDA CURRICULUM CONTROLS

I. INTRODUCTION

This study of Florida curriculum control systems investigated seven primary policy areas: 1) curriculum guidelines, 2) graduation requirements, 3) student testing, 4) school evaluation, 5) teacher certification, 6) instructional materials selection, and 7) information systems. In addition, this study investigated two other policy areas: the School Accountability Program Grants and the Student Performance Standards of Excellence Program. Overall, Florida has a moderately strong curriculum control system. This conclusion is based upon an evaluation of the policy areas listed above in terms of four criteria: consistency, prescriptiveness, authority and power. The policy areas have a moderate degree of consistency with each other. Generally, the policy areas show high to moderate levels of prescriptiveness and authority and moderate to low levels of power.

There were no Florida state curriculum guidelines prior to the 1984 Omnibus Education Act. That Act mandated that the Florida Department of Education develop curriculum guidelines for courses required for graduation for every high school subject area.[1] The legislature required that the Department of Education write curriculum guidelines with two parts: curriculum frameworks and student performance standards.

The Florida Department of Education (DOE) implemented the legislative requirements for curriculum frameworks by developing a list of general objectives for every course required for graduation; and, to meet the mandate for student performance standards, by writing Course Student Performance Standards. The course standards are more specific than the general objectives for most courses required for graduation. The DOE did not write a general curriculum document, identifying the scope and sequence of either the K-12 or 9-12 curriculum for each subject area (i.e, social studies, mathematics). The general course-by-course objectives and the more detailed Course Student Performance Standards are the only state curriculum guidelines in Florida. State officials usually refer to the more specific Course Student Performance Standards as the actual curriculum guidelines.

The course standards are extensive, covering the major objectives for every course that meets graduation requirements. Since 1984, the Legislature has increased the cross-policy consistency between the Course Student Performance Standards and other policies. Because the Course Student Performance Standards, like most other Florida educational policies, are mandated by law they appeal to legal authority. The Course

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[1] Note, the 1983 RAISE legislation had already established state-wide graduation requirements: three courses in social studies (World History, American History, Government/Economics) and any three courses in mathematics.

Standards do not create a new curriculum vision that revises either the course titles, scope or sequence of subjects, but instead create standards for commonly titled courses offered in most high schools. Thus they appeal to normative authority. Local school districts are required to adopt Course Student Performance Standards. The DOE is only beginning to monitor whether students learn what the standards prescribe. The state Department of Education does not either sanction or reward schools or teachers for teaching or students for learning their content. Therefore, the curriculum guidelines lack power.

State-mandated graduation course requirements are new in Florida. The 1983 RAISE legislation set the number of credits for graduation. Course requirements are minimally prescriptive and loosely linked to the state curriculum guidelines. The course requirements are most consistent with the school evaluation system and are neither consistent nor inconsistent with most other policies. Because they arise from legislative mandate the course requirements take on the formal authority of law, and the power of potentially withholding graduation.

Student tests form one of three parts of an educational accountability system in Florida. The other accountability policies regard the collection of quantitative information from districts, and the school districts audit. Florida tests all tenth grade students in basic reading, writing and mathematics skills.[2] Two basic competency tests are used, the SSAT-I and SSAT-II. To graduate, students must pass only the SSAT-II, a functional literacy test. While there are other state basic skills tests, including science, computer literacy and tests projected for social studies, none of these evaluate the knowledge of all state students and none are required for graduation. The state requires, and the Department of Education has developed, course-specific subject tests in mathematics and social studies that promise to link the curriculum guidelines for every course with matching course tests. Though the minimum competency SSAT-II test can decide whether a student graduates, course tests (based on Course Student Performance Standards) are unconnected to any consequences, negative or positive, for school districts, schools or students, and few exist at the present time.

Part of the larger state network of accountability programs, the school audit examines the extent to which school district policies reflect state educational policies. The evaluation, based mainly on school district document examination, is broad but relatively superficial; it is not an audit of practice. While districts are expected to adopt state law and educational regulations, districts and schools have wide discretionary authority to implement state educational policies. Florida's school audit system is closely linked with the state's curriculum control policies. Generally, the Florida school district accountability system is broadly prescriptive, authoritative, minimally powerful, and highly connected with other curriculum policies. The only formal state policy for teacher

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[2] Students are also tested in basic skills at grades three, five, and eight.

inservice is that local districts must have a long-term inservice plan.

The teacher certification policy includes a series of legislative acts both toughening and loosening standards. In its present form, elements of the certification policy seem highly prescriptive, formally authoritative, and powerful. Parts of the teacher certification policies are consistent with school evaluation audits and the curriculum guidelines. The school audit checks that teachers are not teaching "out of field." One of the tests teachers must pass, a test in their certification area, has been correlated with the curriculum guidelines. To a great extent, the Florida Department of Education tries to assure that beginning teachers (and indirectly, teacher training programs) understand at least the content of the subject areas for which they are certified and in which they are expected to teach.

Florida's textbook policies regulate the process of textbook evaluation and regulate the participation of publishers and local districts to ensure that textbooks match state curriculum guides. Because of the substantial financial advantage accruing to districts who use mainly approved materials, the policies are powerful. Florida textbook policies are based on the authority of law, expertise and local consent. The textbook policies are consistent with other curriculum policies and are highly prescriptive. In short, the textbook policies for high school texts seem quite strong, especially when compared to those of New York or California.

Florida maintains an increasingly elaborate system to collect and process quantitative indicators of the "quality" of education. Authorized by law, the Management Information System (MIS) performs this function. The MIS monitors mainly two things related to state curriculum systems: student basic competency tests and upper-level course taking. Collection of such data links MIS to student competency testing and course requirements policies. However, at this time, MIS collects data allowing the state only to monitor the extent to which teachers teach or students learn the Student Minimum Performance Standards and the Course Student Performance Standards for basic mathematics only. The state MIS collects no data on the new course tests, and collects no other information that allows state officials to assess or control the extent to which schools teach the rest of the curriculum guidelines. Though upper-level course statistics can be used as one part of an assessment of educational quality, knowing that more students take upper-level courses does not tell the state what teachers teach or what students learn, or whether what is taught or learned has anything to do with what the Course Student Performance Standards prescribe. At this time the link between MIS and state curriculum guidelines is mostly indirect.

Florida has two other major policy initiatives that do not fall into any of the other categories in this summary. The first initiative is the 1984 legislative mandate that the state Department of Education develop Student Performance Standards of Excellence (SPSE). The second is the 1989 School Accountability Program Grant system (SAPGs) to give extra monies to districts that evidence substantial improvement on several quality

indicators. These programs are formally authoritative and powerful, and broadly prescriptive. However, both programs lack consistency with other state curriculum programs, and the SAPG quality indicators differ substantially from those presently collected and reported by the Management Information System.

The next two sections of this study provide 1) detailed descriptions of each policy area, and 2) an evaluation of each policy in terms of consistency, prescriptiveness, authority and power.

II. POLICY DESCRIPTIONS

A. Curriculum Guidelines

Until the Omnibus Education Act of 1984, there were no state curriculum guidelines for any subject area or course.[3] The Accountability in Curriculum, Educational Instructional Materials and Testing Act, part of the 1984 Florida Omnibus legislation, required that the state Department of Education develop guidelines for the identification or development, evaluation, oversight and revision of:

1) curriculum frameworks
2) student performance standards
3) model standards and procedures for state and district adoption of instructional materials and software
4) model standards and procedures for state and district adoption, analysis and use of nationally normed tests
5) criteria and procedures to determine individual school programs which are most deficient in student performance
6) model training procedures for state and district personnel responsible for evaluating and selecting instructional materials, software and norm-referenced achievement measures
7) standards for effective evaluation and comparable evaluation and testing procedures among districts (FL84, pp. 396-398).

The Act proposed the development of state student performance standards so that tests could be administered in all "approved" areas by the 1989-1990 school year. The testing instrument was to become part of already required periodic school district reviews. According to the law, individual school programs found to be lacking would receive

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[3] As of 1978, there were no State minimum standards for minimum competency. In 1979, the Florida State Board of Education adopted minimum student performance standards in reading, writing and mathematics to be measured at regular intervals in the K-12 years. See the student testing section of this summary for more details.

priority resources to help them correct deficiencies in test results (FL84SUM, pp. 21-23).

Florida Course Student Performance Standards are not frameworks, that is, overall conceptions of the scope, sequence, processes, and operations in subject areas, supported by rationales. Rather, the guidelines are actually collated, separate, course descriptions for state-approved courses in each subject area, listed in a catalog called the Course Directory Code.

The content for most social studies and mathematics courses is formally stratified by student ability groups. In social studies, there are separate Course Student Performance Standards for three ability levels -- introduction, regular and honors -- for the required social studies courses: World History, U.S. History, Economics (one-half year), and Government (one-half year). Since the legislature did not specify particular mathematics courses, students can meet graduation requirements in mathematics by taking any three courses listed in the Course Code Directory. The Department of Education has written standards for 33 separate courses a district might offer to meet graduation requirements. There are standards for three levels of mathematics courses: basic, basic college preparatory and honors college preparatory. There are 11 basic mathematics courses with different titles and very similar content. They include Consumer Mathematics, General Mathematics I, II and III, Fundamental Mathematics I & II, Basic Skills in Mathematics I & II, and Pre-Algebra. College preparatory courses include Algebra I (basic and honors), Geometry (basic and honors), and Algebra II (basic and honors), Trigonometry (one level), and Calculus (one level).

The formats for the mathematics and social studies Course Student Performance Standards are similar: one-page lists of general course objectives, usually followed by a breakdown of the more general objectives into more specific student behavioral learning objectives. The general objectives describe the major concepts or content of each course, any laboratory activities, intended outcomes, what graduation requirement each meets, the grade level, and any special notes about the course. The second section describes each of the intended outcomes for each of the more general course concepts or content in more detail. Courses most frequently offered and taken to complete graduation requirements have both sets of guidelines, while others have only the cover sheet. For example, while General Mathematics I, II and III all have general and more specific objectives, Multivariate Calculus has only a brief cover sheet of general objectives.

The legislature intended that the guidelines be specific enough to guide subject instruction across the state, but general enough to allow local adaptation of the main principles (Respondent I). The 1984 law provides that:

> the Department of Education shall develop, maintain, and revise as necessary curriculum guidelines for the purpose of ensuring instructional consistency and assessment within academic disciplines among Florida's public schools. A curriculum guideline is a set of broad guidelines which

aids educational personnel in producing specific instructional plans for a given subject area or area of study (FL84, p. 398).

B. Course Requirements

Until 1983, Florida did not require its high school graduates to meet any common requirements. With the RAISE legislation of 1983, Florida established graduation requirements for the graduating classes of 1985 (at 22 credits) and of 1987 and after (24 credits). The legislature specified the distribution of those twenty-four credits by subjects. Included in that specification were three credits in both mathematics and social studies. Also included in the social studies courses were one credit in World History (including a requirement to teach "americanism vs. communism") one in American History, and one-half credit in both Economics and American Government. The Act also required that by 1986-87 students maintain a 1.5 (on a four-point scale) overall grade average.

Subsequent legislation augmented these requirements. For example, the 1984 Omnibus Act allowed students to substitute vocational courses for required courses (in mathematics, English and science). Florida Department of Education rules limit such substitution to no more than two credits per subject area (FLCCD, p.6). The 1987 Omnibus Act also included provisions relevant to course requirements: delaying the 1.5 grade point requirement to 1988-89, and specifying that students who pass all required courses can receive a standard high school diploma until the 1988-89 implementation of the higher requirement; mandating a uniform numerical grading system for high school students beginning in 1987-88; and specifying that one credit must equal or exceed 150 hours of instruction. The 1987 Omnibus Education Act further modifies course requirements by allowing local districts to substitute graduation requirements for potential school dropouts. The law states that this substitution must be done with state approval. It is not known how the district gets state approval or how many students have graduated under these conditions.

While the sections establishing the course requirements do not specify the sequence, one state official reported that local districts were required to offer sequential courses to students as part of their pupil progression plan (Respondent V).[4] This is confirmed by a state audit of a Florida county. There, each subject program audited must meet the requirement that "The program is planned and coordinated to ensure that a comprehensive, sequential program of skills, concepts and processes is implemented throughout the district" (FLACOL, p. G-17).

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[4] According to 1983 legislation, all school districts and schools must have a pupil progression plan for each student. While pupil progression plans are not discussed in this report, they are described in detail in 1983 Florida education law, and referred to in the school district audit criteria.

Florida identifies and classifies every possible course offering in every subject area in most schools. Each type of course in every subject area is listed in the Course Code Directory. The Department of Education has developed codes for the type of course, whether it meets a graduation requirement, at what level it should be offered, and so on.

C. Student Testing Policies

Along with the school district audit and the state collection and tracking of the quality of schools, the student testing program reflects the importance Florida assigns to educational accountability. Florida administers two kinds of tests to students. One assesses their basic competencies in mathematics, reading and writing. Another assesses the student knowledge of course frameworks mandated by the state. The latter testing program is more recent and less extensive but potentially more closely tied to the curriculum guidelines than the former.

Since the 1985-86 school year, the Florida Board of Education has required high school students to master basic competencies in reading, writing and mathematics as identified in two tests, the SSAT-I and the SSAT-II. The SSAT-I and II are similar in that they both examine basic competencies in reading, writing and mathematics; and students take both tests in the tenth grade. Also, each of the tests is based on a set of standards adopted by the state Board of Education in May, 1979, after a two-year review period involving many participants from all levels of the Florida educational system. This set of standards is called the "Student Minimum Performance Standards." These standards cover both SSAT tests. Should students fail either test, districts must ensure that such students receive remediation so that students will master the required competencies prior to graduation.

The SSAT-I and II differ in various ways. First, they are different in that the SSAT-II examines functional literacy, while the SSAT-I tests functional literacy and other subject-specific basic skills and knowledge. They are also different in that students must pass the SSAT-II prior to graduation, but take the SSAT-I only once. If students fail the SSAT-II they may retake it until they pass; districts are required by law to offer the SSAT-II test four times each year. The SSAT-I is a basic skills competency test in reading, writing, and mathematics.[5] The SSAT-II is a functional literacy test, based on

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[5] The Legislature has mandated Student Minimum Performance Standards and testing for science, computer literacy, and most recently, social studies (history, government, geography, and economics). The state tests science and computer literacy in a sample of schools, rather than testing every student at grade ten. The legislature called for the development of social studies Student Minimum Performance Standards by July, 1987, and the areas indicated above were to be included in the "annual testing program," presumably meaning the SSAT, part I. A state official from informed me that Student Minimum Performance Standards testing in social studies would be done on a limited

"functional communications and mathematics standards." The SSAT-II, measures functional literacy, defined as "the student's ability to successfully [sic] apply basic skills in reading, writing and mathematics to everyday life situations" (FLSMPS, p.7). The SSAT-I tests a broader competency, and it includes the more limited objectives covered in SSAT-II. Both the SSAT tests are given at grades three, five, eight and ten. The grade ten test establishes minimum basic skills in reading, writing and mathematics that students must master prior to graduation. While a social studies basic competency has been mandated by the legislature and is under development, it will not be administered to all students. Students need not pass it in order to graduate.

As part of the 1984 Omnibus Act, the legislature mandated that similar standards matching (through the Florida Accountability in Curriculum, Evaluation and Testing (FACET)) the curriculum frameworks be developed and approved by the state Board of Education along with the frameworks, by June 30, 1986. Furthermore, the legislature mandated that such tests be referenced to national norms in the subjects tested. Since 1986, the Department of Education brought course tests through development and field testing of randomly sampled groups. The first state-wide administration on the field tests will be the tests on Algebra I and Algebra I Honors in the spring of 1990. In each of the years to come, two more tests will be given, such that student performance in all required subjects can be tested eventually. At present, what will be done with test results is unclear (Respondent II).

Present basic skills and the new course tests have raised the concerns of districts that already administer their own tests. Conceivably, students might take local course tests, state course tests and state SSAT tests all in one year. Districts are concerned about the number of tests. Presently, a task force is examining testing in Florida, at least partly to decide what tests are most important (Respondent III).

D. School Evaluation

Since the late 1970s Florida has maintained at least three programs for evaluating school performance: the minimum student competency testing policies (SSAT-I and II), the management information system (MIS), and the "Comprehensive Compliance Monitoring System" (called the school district audit). The Department of Education concerns itself mainly with monitoring school district compliance with state legislation and state Board of Education policies. The school district audit most directly evaluates school district legal and regulatory compliance. The aspects of schools each of these programs evaluate have changed with 1980s state mandates for reforming Florida's

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sample (Respondent I). Given the usual time between development of standards and testing on those standards (four to five years), one might expect that testing in social studies will be no earlier than 1991.

schools.

The Department of Education Division of Public Schools visits the 67 Florida school districts every three years to assess district compliance with the numerous state education laws and regulations. Auditing teams of Department of Education officials from different departments assist in the evaluation of four "systems:" curriculum and instructional services, instructional support programs and services, management, and administrative services. This usually includes less than a dozen individual auditors. Typically, curriculum specialists participate in the evaluation of curriculum and instructional support services.

After giving districts one weekend's notice, the team spends about a week examining many central office documents, and visiting selected schools. The length of visit varies with the size of the school district, but is not longer than one week (FLCCMS). The audit focuses on finding evidence in district policy documents that reflects compliance with state law. However, some aspects of the audit require physical examination, e.g., the school plant and the school science laboratory facilities. Upon the discovery of discrepancies or compliance problems, Department of Education officials might choose to investigate these by visiting schools to investigate further (Respondent V).

Auditors in the curriculum area may examine school district policies specific to 26 components of the curriculum, instruction, and instructional support services.[6] One such component is "General Education Program Planning and Implementation." There are six criteria for compliance with this component, four of which deal with state law regarding high school curriculum and instruction. For example, the state requires that school districts adopt the curriculum performance standards in the frameworks in all graduation courses, and to adopt Student Performance Standards of Excellence per the state standards. To monitor compliance, auditors look for documents that establish that:

> 3. The school board has adopted rules which provide for instruction based upon the Student Performance Standards of Excellence in mathematics, science, social studies, and writing.
> 5. The school board has adopted Course Student Performance Standards for each academic course in grades 9 through 12 for which credit is granted (FLCCMSCR, p. 14).

These criteria are representative of the scope of almost all of the audit criteria. Every legislatively-mandated aspect of schooling is reflected in criteria that look for school district policies as evidence of legal compliance. In the two curriculum and instruction systems areas there are about 190 of these type of criteria. According to a state official,

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[6] The audit also evaluates the school management system and administrative services.

not one district has ever failed to comply with the provision that requires adoption of curriculum performance standards (Respondent V).

Should auditors find a lack of compliance, the Department of Education typically gives districts six months to correct the problem, unless it involves a serious discrepancy or an issue of safety (Respondent V). For example, not complying with criterion five above would result in a Department of Education demand for immediate compliance.

E. Teacher Certification and Inservice

1. Teacher Certification

Since 1978 teacher certification rules in Florida have undergone considerable and continuing revision. The 1980s have seen increases in both educational reform efforts and migration to the state. While the state has moved to insure that teachers and teacher training institutions produce adequately trained teachers, the immediate need for teachers has grown. The combination has resulted in some policies toughening and some policies easing teacher certification requirements. Mandated in 1986 and in the process of implementation, teachers must pass a subject certification exam that is correlated with the curriculum guidelines in their teaching area.

Teacher certification in high schools now includes all of the following elements. First, in a teacher training institution, candidates must complete at least thirty semesters hours in a subject area (social studies, mathematics) prior to receiving a two-year temporary teaching certificate. Candidates for 6-12 mathematics must take at least one course in calculus. Candidates in 6-12 social studies must also take either a course in four separate social studies areas, or take from three to six credits in six separate subjects, including U.S. and non-U.S. history, political science, economics (only 3), geography and sociology (only 3). Social studies candidates for single subjects in every subject except history must take at least twelve of their thirty credits in the subject in which they wish to be certified; history candidates must either have a major in history or at least 18 semester hours (of 30) in U.S. history (6), non-U.S. history (9), and U.S. government (3) (FLSUM86, p.3, FLTCERT, p. 1-2).

Second, testing is a significant element of teacher certification. Testing, a key component of teacher certification, has changed since 1988. From 1978 to 1988, the teacher certification examination was like the SSAT-I: it tested teachers' knowledge of basic skills in reading, writing and mathematics (see Freeman, 1983 for a detailed description of the test criteria). In the same time period, 80% of all teacher candidates in a teaching training program had to pass the teacher certification to retain their certification as a state-approved training institution. Since July 1, 1988, due to 1986 legislation (Florida Chapter 231), the state has replaced the basic skills test with a college skills test. Before they receive their first two-year temporary certificate and start the Beginning Teacher Program (see item 5), prospective Florida teachers must pass a

College Level Academic Skills Test, commonly known as the CLAST test. All Florida college sophomores must pass this test to enter their junior year. This test is much more rigorous than the previous basic skills test. The test includes essay writing, basic English language skills, reading comprehension, and mathematics (includes material in algebra, trigonometry and calculus) (FLCLAST). Whether the 80% rule applies to the CLAST test is presently unclear (Respondent IV, Respondent I).

Third, legislation in 1986 added another two tests to the certification program. Candidates must pass the test of professional educational knowledge (pedagogical and psychological theories) before they can qualify for a regular five-year teaching license. Also, due to 1986 Florida legislation, teachers must pass subject area examinations that are "correlated to state curriculum frameworks and student performance standards and approved by the state Board of Education" (FLCH231, p. 97). These subject area certification tests have gone through a three-year process involving the advice of a core of university and lower level mathematics teachers, field review of questions, and testing for reliability and validity. First administered in 1989, there are exams for both 6-12 social studies and mathematics, and a variety of social studies specialties, including: humanities, psychology, sociology, history, economics, political science and geography. These tests may prove difficult for prospective teachers. Scores on the first mathematics test were much lower than officials anticipated. Discussion on what constitutes a passing score on these exams and how much time the state will give teachers to pass the test is underway (Respondent IV).[7]

Fourth, candidates must pass local district evaluations of their performance in one year of "beginning teacher"[8] internship; districts are required to establish a state-approved plan for evaluation, and all beginning teachers should have "mentors," i.e., teachers with experience at the school. During their first year of teaching in Florida, teachers must participate in the Beginning Teacher Program. They must pass an evaluation of their teaching competency, part of which, by law, must be based on their knowledge of college-level competencies and specific subject matter knowledge (FLCH231, p. 98).[9] While the state does not directly monitor this, districts are required to submit evaluation plans to the state, and such plans must include all the components required by law.

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[7] Vocational subject teachers have been granted extensions to the normal time limit (Respondent IV).

[8] Beginning teachers are defined as all teachers teaching in Florida schools for the first time, regardless of how many years they might have taught in other states.

[9] Other competencies include recognizing student distress, drug and alcohol problems, signs of abuse and neglect, indicators of student development, and the needs of exceptional students. The extent to which or the manner in which most districts examine these first year teacher competencies is not known at the state level.

Finally, candidates for the (regular) five year license must also take six credits of additional coursework or inservice.

Since the late 1970s, the legislature and the Department of Education have worked to toughen the subject knowledge aspects of teacher certification and have worked to link certification to the curriculum guidelines. At the same time, they have eased certification requirements for arts and science majors and those needed to teach particular subjects in areas of the state (urban) where there is a shortage of teachers. For example, in 1983, school districts were authorized to employ "adjunct instructors to teach in areas of critical shortage, such as math, science and foreign languages," (FLSUM83, p.3) and in urban areas. Instead of meeting all teacher certification requirements, such beginning teachers would only need a bachelor's degree in their area of specialty and meet "other preparation requirements that are to be established" by the state Board of Education (FLSUM83, p.3).

The 1984 Omnibus Education Act further eased the certification requirements for secondary schools. In order to attract arts and sciences graduates to teach in Florida schools, the legislature set the following certification requirements:

1) a minimum 2.75 overall grade average;
2) a bachelor's degree in the subject of specialization;
3) a passing score on the Florida Teacher Certification Examination, and beginning June 1, 1986, on the subject area component part of the examination;
4) satisfactory completion of a Beginning Teacher Program during the first year of teaching; and
5) successful completion of same during the second half of the candidacy year.

2. Teacher Inservice

Unlike New York and California, there is no state-sponsored or conducted curriculum inservice program. Districts are required to have long-term teacher inservice policies (of their own construction) and teachers are required to take six college/inservice credits every five years (three of the six credits should be related to their teaching assignment). The 1983 legislation called for districts to develop a five year plan for teacher inservice. It also funded teacher salaries for summer institutes for teachers "out of field" in social studies and mathematics. The legislation supposedly included enough money to provide summer institutes for all math and science teachers over a two-year period (it is not known why other subject areas were not included). The content of teacher inservice/staff development programs was not specified by the state, and I am unaware of the content of the program. What inservice districts provide is not regulated by the Department of Education; the school district audit looks for evidence of a long-term teacher inservice program but does not specify its nature.

Despite the lack of a state inservice policy, participating in inservices constitutes an important part of the work of state curriculum specialists. One state official whom I interviewed worked almost half-time giving technical assistance to districts and teachers throughout the state. Per district requests, state subject specialists may help design or conduct inservices in their subject areas. Typically such specialists also maintain contact with subject organizations, district curriculum supervisors, meet with curriculum revision groups, serve on district audit evaluations, and consult with testing people regarding changes in subject area certification tests (Respondent III).

F. Instructional Materials

Florida requires a state review of available textbooks in all 9-12 required subjects. The textbook adoption process is lengthy and bounded by many state laws covering the process of adoption. State laws govern the process of review, criteria by which materials should be reviewed, criteria governing the involvement of publishers in the process, and appeal procedures. One of the criteria specifies that textbooks reflect the state curriculum guidelines. Once textbooks are adopted, they remain on the list for six years. For example, the next 9-12 social studies adoption will be in 1991, and textbooks will remain approved until 1997; the 9-12 mathematics adoption occurred in 1990.

State law creates strong incentives for districts to use state-approved textbooks through a system of reimbursement. Each year each district receives state funds for the purchase of educational materials. School districts may use all or none of this amount to purchase textbooks. However, they may use only up to one-half of their textbook fund to purchase materials not on the state adoption list. Furthermore, all textbooks must be reviewed (not necessarily approved) prior to use in classrooms (FLAP, p. 2).

G. Management Information System

The educational information management system in Florida is one of three parts of the educational accountability system. Since 1983, the formal purpose of such reporting has been to measure the progress of Florida elementary and secondary schools toward "excellence" (FSPE, p. iii). Florida measures such progress by collecting data on four types of progress indicators: output, input, process and opinion. Output indicators measure the achievement of Florida students, including comparisons of Florida students and other students in the nation on SAT and ACT tests; the extent of improvement in Florida SSAT-I and SSAT-II pass rates (by reading, writing and mathematics); and Florida students' success in competition for national awards (e.g., Westinghouse Science Talent Search).[10] Input indicators measure aspects of resources which Florida schools

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[10] Output indicators:
-the number of National Merit Commended Scholars and semi-finalists and academic achievement as measured on the SAT, ACT, PSAT, College Board

provide to insure an adequate public education. They include teacher salaries, per capita educational expenditures, the number of students served by exceptional education programs, and the average class size in Florida schools.[11] Process indicators measure the student participation in upper level academic courses (mathematics, science, foreign language and fine arts), and the percentage of high school students who have personal career plans on file. Opinion indicators measure employer satisfaction with graduates of Florida school vocational programs. Each year the Florida Department of Education reports these statistics to the state Board of Education (FLPE, pp. iii-1).

H. Other Policies

1. School Accountability Program Grants

Directly and currently related to the high school mathematics curriculum system is the legislated program accountability grant system. Created in 1989, the program establishes new quantitative indicators of the quality of a school's curriculum. The indicators include:

1) improvements in the graduation rate;
2) improvements in the dropout rate;
3) improvements in the grade to grade promotion rate;
4) increased enrollments in upper-level math and science courses (two separate indicators); and
5) reduced remediation needed by high school graduates in post-secondary institutions.

Should schools meet state standards for improvement or success on each of these indicators, they will be eligible to receive additional state funds. The formula used to calculate eligibility is based on the number of indicators on which the school meets or exceeds state expectations.

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achievement tests
-the extent of improvement in Florida SSAT-I and II pass rates
-the number of winners and participants in national contests and exams
-the placement percentages on occupational proficiency students
-the number and percentage of high schools seniors who are awarded college scholarships and grants.

[11] Other input indicators include:
-the percentage of teachers who hold degrees;
-the percentage of minority teachers;
-the percent of schools accredited by the Southern Association of Colleges and Schools.

2. Student Performance Standards of Excellence

As part of the 1984 Omnibus legislation, the state Department of Education was directed to identify standards of excellence in subject programs at grades 3, 5, 8, and 12. Also, districts were required to adopt these to supplement their other lower-level sets of standards.

Student Performance Standards of Excellence are written in a format similar to the Student Minimum Performance Standards, but the skills listed under each standard of excellence in a subject are more general. For example, one of the 12th grade social studies standards is that "students will explain the relationship between beliefs and values, and how these concepts affect human behavior and conflicts." A skill associated with that standard is that students will "predict ways social institutions may affect the quality of human life" (FLSPSE, p. 84).

III. ANALYSIS OF THE POLICIES

A. Consistency

1. Guidelines and Cross-Policy Consistency

Since 1983, the guidelines have been loosely but increasingly linked to other curriculum control policies. Guidelines seem most directly linked to the course requirements policies, the school district evaluation policies, the textbook adoption policies, and parts of the student testing policies.

There is a direct connection between state course requirements and the curriculum guidelines. Since 1983, the state requires (among other things) that all students take three credits (year=credit) of social studies and three credits of mathematics. The law further specifies that the social studies courses be one credit of World History, one credit of American History and one-half credit each of Government and Economics. The 1984 Omnibus Act requires the development of curriculum guidelines for courses required for graduation. Accordingly, the Department of Education has written and distributed course guidelines documents for every course required for graduation. These include three ability levels of course guidelines (introductory, average and honors) for each of the four required social studies courses, and for the entire range of mathematics courses taught in high school. The Department of Education produces guidelines for mathematics and social studies courses required for graduation.

The guidelines are also linked to the state's school district evaluation system. The audits follow a standard set of processes and use written evaluation criteria developed at the state level. Most of the audit processes and criteria rely on the existence of district

documents that show compliance with state education law. During an audit, the state examines the extent to which the district "provides for curricular offerings based on student and community needs consistent with the state and district course of study" (FLACOL, p. g-15). However, audits are confined mainly to reviews of district policy documents. For example, auditors might look for evidence of a district policy requiring district adoption of state Course Student Performance Standards for all courses leading to graduation. The audits stop short of examining practice.

School audits may, but are not required to, sample different K-12 academic subject programs. Whether any or several curriculum areas are evaluated is up to the team and team leaders. They might choose to evaluate the mathematics or social studies (or any other) program in a district. State officials have sent us two audit reports: in one curriculum program, evaluation forms an important part of the entire audit; in the other audit, curriculum is not addressed. For example, a 1985-86 audit of one local district used fifteen state Comprehensive Compliance Monitoring audit standards to evaluate the mathematics program. One of those standards is that "The district has adopted student performance standards and policies for determining student mastery" (FLACOL, p. G-22). An audit of another district does not evaluate any curriculum programs (FLALEV). Decisions on what to evaluate are based on several factors listed in the school evaluation section of this summary.

Parts of student testing policies are linked to the curriculum policies. There are two types of student tests: those that assess student knowledge of basic skills in mathematics, reading and writing, the SSAT-I and II; and those that test student knowledge of the Course Student Performance Standards. Begun in the late 1970s with other accountability programs, the SSAT-I and SSAT-II together are highly consistent with all the eleven basic mathematics course standards. While the state continues to add other subject areas to basic skills competency testing, the only test all students must pass for graduation includes mathematics, reading and writing.[12]

The second kind of student test Florida administers to students is the course test, based directly on the Course Student Performance Standards. This kind of test is relatively recent. In an attempt to implement the legislative 1984 mandate to test student mastery of every high school course leading to graduation, the Department of Education developed tests in a variety of high school subjects, now including most graduation

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[12] Since the beginning of competency testing in the three main areas, the legislature has added tests in science, computer literacy and most recently social studies. However, these other tests are administered to samples of students throughout the state. Only some students take these tests, and the outcomes are not publicized in any of the state documents for the public. As far as I can tell, though the DOE develops and administers the tests, the results do not affect any other educational policies or result in any rewards or sanctions for schools, teachers or students.

courses in social studies, and many courses in mathematics. The Florida Department of Education began testing all students in Algebra I and Algebra I Honors in 1989. The tests are based on the state course performance standards. The testing and evaluation program will keep testing two or more different courses a year (I do not know what they tested in 1990). At present, the state Department of Education has not decided what to do with the test results (Respondent II).

In Florida, state law requires that all instructional materials must be reviewed before being used in public schools. The state Department of Education has developed an extensive system for a regular and continuing system for evaluating instructional materials. Districts are reimbursed more fully for money they spend on state-adopted materials. This incentive strongly supports use of state-adopted materials.

Curriculum guidelines are also consistent with the materials adoption policies. In order to be approved for state adoption, a state Materials Council must judge the material to be "comprehensive." By that, the Department of Education means that the text must reflect the Course Student Performance Standards for the course in question (and the Student Minimum Performance Standards and the Student Performance Standards of Excellence). A state training manual describes how to judge comprehensiveness in instructional materials (FLIMC).

2. Course Requirements and Cross-Policy Consistency

Florida course requirements are consistent with the guidelines, and consistent with the state performance audits of each school district in the state. Florida course requirements and the guidelines are directly related. There are guidelines for the courses required by the graduation standards. There are at least general guidelines for every mathematics course since any mathematics course can meet graduation requirements. There are course guidelines for all of the required social studies classes. There are no guidelines for non-required courses.

Florida course requirements are also linked to the school district audit process. The audit team reviews eight criteria summarizing each aspect of the legislative requirements (i.e., the 150 hour requirement, the minimum of 24 credits for graduation, and the two-credit maximum substitution of vocational courses for required academic courses).

3. Student Testing and Cross-Policy Consistency

Because the student testing program is actually two very separate testing programs, it is difficult to speak of any general consistency between student testing and other policies. It is better to deal with competency and course tests separately.

(a) course tests

Course tests are directly correlated with the curriculum guidelines' Course Student Performance Standards. Test questions directly reflect the knowledge required by standards. Partly because the administration of course tests began in spring 1990, the tests are not yet directly connected to the other curriculum policies. Their substantial correlation with state curriculum guidelines links these tests indirectly to the school evaluation, management information system, the textbook policies and course requirements.[13]

(b) competency tests

For all basic mathematics courses, the Student Minimum Performance Standards at grade ten are almost the same as the Course Student Performance Standards. Though all the basic mathematics course standards prescribe the Student Minimum Performance Standards in mathematics, for simplicity, I will focus on the correlation between the General Mathematics I Course Student Performance Standards and the Student Minimum Performance Standards. All of the SSAT-II and SSAT-I skills listed in the 1985 Student Minimum Performance Standards booklet are listed in the course framework for General Mathematics I. General Mathematics I is designed to teach all of the content covered in the two basic skills tests in mathematics. The General Mathematics I course guidelines cover more items than the two tests, e.g., basic measures of central tendency, computing with integers, and solving first-degree equations. Some of the items in the Student Minimum Performance Standards are not found in the General Mathematics I guidelines (none of these are tested in the SSAT- II). For example, Student Minimum Performance Standards items #101 and 102 ask students to determine if sufficient information is available to solve a "real-world problem" having one or two steps, respectively (FLSMPS, p. 37). With these exceptions, General Mathematics I and Student Minimum Performance Standards describe the same content.

Student Minimum Performance Standards and the objectives for General Mathematics I correlate highly. In the General Mathematics I course guidelines, objective number two specifies that students "demonstrate the ability to solve real-world problems involving no more than two whole numbers, decimals, fractions, and percents." One more specific skill is to "solve real-world problems involving percents, using no more than two distinct operations and limited to problems concerning simple interest, sales tax, or rate of discount" (FLFGMI, p. 19). This specification matches the functional literacy specification #132, "solve real-world problems by finding simple interest;" specification #133, "solve real world problems involving purchases and a rate of discount given in

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[13] I have this on authority of a subject specialist who promised to send examples of tests. These have not yet arrived. The description of test criteria led me to believe that the tests were consistent with the Course Student Performance Standards.

fraction or percent notation" (FLSMPS, p.48). Most of the numbered specifications in the course description refer to grade ten competency standards covered in the SSAT-I.

Several other policies are linked to student minimum competency testing. For example, the school audit determines if local districts have written policies both adopting the minimum standards and supplementing them with standards of excellence (FLACOL, p. G-9). Also, audits check to see that the SSAT-II is given four times a year, in accordance with law. Course requirements are loosely tied to the student tests. Even the projected social studies tests will not be required for graduation, will not cover world history, and will only sample districts randomly. Only basic mathematics courses purport to teach the Student Minimum Performance Standards. Thus, course guidelines in social studies and two-thirds of all mathematics are not reflected in the competency testing program. Textbook adoption standards reflect the Student Minimum Performance Standards. One of the criterion state textbook selection training materials specifies is that the content of the textbook be comprehensive. By that the Department of Education means that the content matches the Course Student Performance Standards, addresses the Performance Standards of Excellence[14] and Student Minimum Performance Standards in depth (FLIMC, p. III-22). The Management Information System in Florida is consistent with the SSAT testing program. It collects, processes and reports SSAT outcomes state-wide annually ("Florida's Progress Toward Excellence").

4. School Evaluation Programs and Cross-Policy Consistency

The school district audit is linked to every other curriculum control policy. The audit examines district policies that reflect:

1) whether the district has adopted minimum standards (SMPS), Course Student Performance Standards, and Student Performance Standards of Excellence in mathematics, science, social studies and writing;
3) whether teachers are certified in the subjects they teach;
4) whether the district has a staff development policy approved by the Department of Education;
5) whether the district has followed textbook adoption procedures;
6) whether students meet graduation course requirements policies;
7) whether required student tests are administered;
8) whether the district has a district MIS in place,

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[14] The Legislature mandated that the DOE establish Student Performance Standards of Excellence in 1983. The DOE wrote and published them, but they are considered untestable (Respondent III).

9) whether the district has complied with a host of other curriculum related policies (e.g., pupil progression plans, minimum grade point averages for extracurricular involvement, dropout prevention, refugee students, emergency immigrant program).

Florida has linked its curriculum policies extensively to the school evaluation system. Other states tend to focus much more on "school effectiveness" criteria than whether the state-recommended curriculum is in place. For example, California's curriculum-focused evaluation is state-sponsored but not state-conducted; and it does not assess district or school adoption of, or application of, the same range of curriculum policies. To assess whether the state curriculum is in place, a document-based evaluation like that in Florida might be more superficial than an examination of each school's program curriculum and instruction. Yet, such a state-controlled evaluation correlates with the curriculum policies much more extensively than the other states examined in this study and it lends credibility to Florida's other educational policies.

5. Teacher Certification/Cross-Policy Consistency

The teacher certification subject area test program is consistent with the letter and intent of curriculum guidelines. The school audit system is consistent with teacher certification in that an audit checks to see if any teacher is teaching outside of his/her certification area.

Subject area tests reflect both knowledge and instructional processes recommended in curriculum guidelines (Course Student Performance Standards). However, since the tests include only 30 items, subject area certification tests cannot possibly assess the entire range of either knowledge or process items in each of Course Student Performance Standards for every course in the subject area. For example, subject area certification tests in 6-12 Social Science can include items from any of at least 51 criteria in five separate subjects (FLCTSS). All the criteria are generally consistent with subject matter in the curriculum guidelines. However, compared with mathematics criteria, the social science teacher test criteria do not especially match curriculum guidelines. Several items included in the social studies Course Student Performance Standards do not appear in the 6-12 social studies certification test criteria.

When compared to the social studies test, the 6-12 mathematics certification test is more consistent with the mathematics Course Student Performance Standards. The 6-12 test in mathematics can include questions from 234 test criteria arranged by 57 main criteria from courses in basic math to integral calculus. The mathematics criteria appear to be taken directly from the curriculum guidelines' student performance standards. For example, paralleling the curriculum standards calling for a demonstration of real-world problem-solving are similar items in the test criteria. For example, "solve real-world problems involving comparison shopping" is listed in both curriculum guide and the 6-12 test criteria in mathematics.

School audits are consistent with the teacher certification policies. The school audit samples teachers in a district to determine if their certification matches what they teach. The audit also checks to see if the district inservice education component meets with state approval (FLCOL86, p.G-21, p. I-11). To that extent it is consistent with teacher certification policies. Neither the school audit nor any other systems monitor the Beginning Teacher Program. Once the Department of Education approves a district's intern evaluation plan, the success of the plan is determined by the district.

6. Instructional Materials and Cross-Policy Consistency

The textbook policies are consistent with state policies on curriculum content, student testing and school evaluation. As indicated above, the Department of Education requires the textbook evaluation and selection match the curriculum guidelines for the particular course(s) in question. New textbooks must reflect the curriculum course standards, the minimum performance standards (from which the SSAT-I and II are derived), and the standards of excellence. The school audit checks to insure that the district materials acquisition policies match those of the state, and that the superintendent complies with all the district instructional materials policies (FLCCMS, pp. 19-20). Textbook policies are not linked to any other Florida curriculum policies.

7. Management Information System and Cross-Policy Consistency

Reports from the educational information system are consistent only with the minimum competency testing program and basic mathematics Course Student Performance Standards, with parts of the student course requirements system, and with aspects of the school evaluation system. Other aspects of the state curriculum system are not monitored by the four indicators. Furthermore, indicator information is not presently disseminated on a school-by-school basis. As a result, the indicators of educational progress measure the strength of the curriculum systems only indirectly. The system is not used to detect and correct weaknesses at the district or school level.

The Management Information System is more directly correlated with the minimum standards and SSAT tests than it is with the course standards and the course tests. The state collects no information to assess the teaching or learning of most of the Course Student Performance Standards, the effects of teacher inservice, the effects of the school evaluation system on instruction, or the effects of instructional materials selection policies (Respondent VI).

The MIS is indirectly consistent with aspects of course requirements policies. For example, The Department of Education can assess the extent to which students on the average grasp the basic skills that form the heart of the fundamental mathematics program (one-third of the mathematics courses listed in the Course Code Directory). The Department of Education can determine if students are electing more upper level mathematics courses, but cannot determine what they are learning in these courses. The

Department of Education does not assess social studies course taking.

The Management Information System is linked to the school audit, but the two do not collect the same information. This is partly by design. The two systems are supposed to evaluate different aspects of educational performance. The audit evaluates district-state policy correlation, the MIS evaluates educational quality according to state-established criteria. In addition, state MIS reports on the four types of indicators are used only to reflect state (as opposed to district or local) progress. However, the school evaluation and management information systems are linked. During the school district audit, a specialist from the state data management system assesses the extent to which the district maintains a data collection system that is consistent with state information requirements. If not, adjustments may be required.

Florida's data system does not directly monitor indicators of the quality of state curriculum guidelines, and indirectly monitors some other curriculum policies. Indirect measures such as basic competency test results and upper-level course taking in selected areas may help the public understand how Florida schools are doing on average, but they provide only spotty information on the state of the curriculum system. At this point, with course testing in its infancy, state officials do not know how teachers interpret the Course Student Performance Standards, how these are taught or to what extent students learn the standards. Until the MIS begins collecting information on the extent to which teachers teach or students learn the state-mandated curriculum, the information collection will necessarily be only loosely connected to state curriculum guidelines.

A new accountability program promises to conflict with the Management Information System's measures of the quality of education in the state. The School Accountability Program Grants (SAPGs), discussed in more detail elsewhere, assesses educational quality in schools and awards schools with higher levels of the indicators with additional money. According to the law creating the Accountability Program Grants, schools with more students enrolled in higher level mathematics and science courses will be eligible for more state monies. To determine eligibility, the Department of Education will access course-taking information already available (but unreported) on a school basis (Respondent VI). This is consistent with the indicators MIS collects. However, other SAP indicators of school quality are not listed by MIS as quality indicators. For example, under the grant program, schools can receive monies by showing improvements in the grade to grade promotion rate, the dropout rate and the graduation rate. These latter are not the same indicators presently reported by the state MIS as measures of educational quality. This suggests a conflict between information management policies and the accountability grants program over what the state defines as excellence.

8. Other Policies and Cross-Policy Consistency

(a) School Accountability Program Grants

With respect to the state curriculum guidelines and every other curriculum policy, except perhaps course requirements and information management, the accountability grants are minimally consistent with these policies. The encouragement of higher level course taking does not require that the courses offered conform with the state curriculum guidelines. Nor can schools receive grants if their students take upper level courses in subject areas other than mathematics and science. Only these subject areas are specified.

Other than upper level course taking, none of the other indicators are particularly consistent with other curriculum policies. The quality indicators in the School Accountability Program Grants conflict with, or at least differ from those presently collected and reported by the Management Information System. For example, Management Information System does not presently report dropout, graduation rate, grade to grade promotion, or remediation given to post-high school graduates. School Accountability Program Grants require school information on each of these items. Likewise, the grant legislation does not require the assessment of student scores on nationally-administered college entrance tests, the number of student winners of national awards, or the percentage of high school seniors awarded scholarships and grants. The latter are output measures of educational quality presently collected by MIS. There is another key difference in the accountability grant and MIS definitions of educational quality: the accountability grants do not assess input, process or opinion indicators in the awarding of grants. Since all of the accountability indicators except higher-level course taking are missing from the present list of triple indicators, the grants appear to tap different notions of educational quality.

(b) Student Performance Standards of Excellence

Since their development and publication, the Student Performance Standards of Excellence have remained unconnected with other curriculum programs except the textbook adoption policies. In particular, the states reporting of indicators of excellence have nothing to do with the Student Performance Standards of Excellence. In the textbook policies, textbooks must be selected with standards in mind.

B. Prescriptiveness

1. Guidelines

Since prior to the 1983 educational reforms there were no state curriculum guides, Florida's present guidelines are very prescriptive. Both the more general "intended outcomes," and the more specific Course Student Performance Standards list student learning objectives in a standard learning objectives manner. That is, describing what

students must do to demonstrate understanding of a concept, skill, or operation. In both sections, the language of the behavioral objectives is the same. "After successfully completing this course, the student will be able to:..." (FLFMALG, p. K-2, 5). For example, for the course Algebra I, the cover sheet lists ten intended outcomes, one of which is "demonstrate the basic properties of real numbers." The Course Student Performance Standards for Algebra I breaks this objective down into three sub-objectives, phrased as "the student will:"

*identify and apply the field properties of real numbers.
*identify and apply the properties of equality.
*simplify algebraic expressions using the field properties (FLFMALG, p. 5).

Social studies course guidelines follow the same pattern. One of the ten general objectives for American History is to "understand how contemporary American society depends upon contributions to past societies and cultures." To that end, the Course Student Performance Standards specify that a student will be able to:

*explain the contributions of the Civil War Period to contemporary America.
*explain the contributions of the Industrial/Urban period to contemporary America.
*explain the contributions of the period of emerging world leadership to contemporary America.
*explain the influence of geography on the political development of our nation 1860-present (FLFSSAH, p. 4).[15]

These prescriptions are more extensive than detailed. That is, the guidelines include most courses common in high school, and every course description lists general content to be covered. However, the lists do not prescribe the importance of separate items, the manner in which each item be covered, what units of study are appropriate, what course sequences are recommended or required, or how much time might be devoted to separate items or groupings of items. For example, one of the four objectives specified is that students will "explain the contributions of the period of emerging world leadership to contemporary America" (FLFAH, p. 4). First, the period is chronologically undefined. Second, what does the objective mean by "contributions?" Third, what contributions are most important? Fourth, when does the contemporary America period begin? Fifth, how does this "emerging world leadership" period help students understand

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[15] I interpreted the general objective as teaching about Native American, European, African, Asian societies of past and present. Yet all of the sub-objectives deal with periods in U.S. history since the antebellum period: the Civil War, the "Industrial/Urban" period, the period of "emerging world leadership," and the New Deal. I found the sub-objectives obliquely related to what I thought was the central objective.

the contribution of past societies and cultures? Finally, how should students "explain" the contributions? The behavioral objectives look specific but lack specificity at the level of unit or lesson organization. Any two teachers might interpret the state Course Student Performance Standards quite differently.

Similarly, some mathematics standards lack specificity at the level of the teacher. The Algebra I course guide states that students will be able to "demonstrate the basic properties of real numbers" (FLFMALH, p. 7). The three sub-objectives specify that students will identify and apply "the field properties of real numbers" and "the properties of equality;" and that students "use the field properties of real number [sic] to justify algebraic statements" (FLFMALGH, p. 7). First, what are "field properties?" Does the objective mean the ordering properties or basic properties of real numbers or both? Second, what is meant by "properties of equality?" Does this statement mean that students will learn to use real numbers to solve algebraic equations? Third, how does one justify an algebraic statement? What is meant by justify? Finally, how important is this objective, how will it be measured, and where does it fit into a unit of study? These are some of the questions the guidelines raise rather than answer.

Florida guidelines do not explicitly define desirable mathematical or social studies thinking processes or operations. Rather, what constitutes higher order thinking is implied in the separate Course Student Performance Standards. For example, appended to the end of the course standards for each social studies course is one objective that covers "vocabulary, geographical, reference/study, critical thinking and decision-making skills" (FLFSSAH, p. 9). What "critical thinking" or "decision-making" skills are, how they fit into a social studies curriculum or why they are more important than some other skills is not identified. None of the Course Student Performance Standards develop or defend a set of social studies higher order skills.

Furthermore, the Course Student Performance Standards for mathematics do not formally develop a conception of higher order thinking. Both New York and California develop and defend the systematic teaching of processes used to solve non-routine mathematical problems. Florida's mathematics Course Student Performance Standards imply that problem-solving is the application of formulas or the repetition of operations. The Algebra II course has students determining the equation of a line, simplifying polynomial expressions, factoring polynomials, solving quadratic equations, applying binomial theorem to binomial expressions, and so on. None of the mathematics courses have students use mathematical concepts in the service of a more general problem-solving process. Another level of problem-solving is implied in the basic mathematics courses (e.g., Fundamental Mathematics I, General Mathematics I). Such courses refer to the solution of real world problems. However, this type of problem-solving involves skills like making change, comparison shopping, calculating interest and so on. Neither of these two uses of the word "problem-solving" correspond with those in California or New York, where problem-solving means the ability to use mathematical concepts to solve non-routine problems.

Florida's mathematics and social studies guidelines differ in the amount of prescriptiveness. In general, social studies course guides are more detailed than those in mathematics. For example, all of the social studies course guidelines contain Course Student Performance Standards (the second section), while almost all of the mathematics courses beyond the Algebra II level lack Course Student Performance Standards (they contain only the cover page). The Florida Course Student Performance Standards for both mathematics and social studies prescribe different knowledge for students of differing ability. The three ability levels of courses for every social studies course prescribe different levels of cognition. The Course Student Performance Standards for introductory social studies courses contain objectives that specify lower levels of cognition, while the average and honors courses specify higher levels of cognitive operations. For example, almost every introductory course sub-objective begins with "identify." About half of the average American History sub-objectives begin with "identify," but the other half begin with "explain," or "compare." The Advanced American History objectives completely avoid identification, and use the following: analyze (14), explain (6), interpret (2), and compare (1). In short, the social studies course ability levels are differentiated by student cognitive ability.

Upper and lower level mathematics Course Student Performance Standards are also stratified by ability. However, mathematics course differentiation is by the amount of objectives that describe arithmetic skills and the total number of concepts students are expected to learn. For example, all eleven of the basic mathematics courses focus predominantly on arithmetic skills. Such skills are rarely mentioned in either the basic or honors college preparatory classes. The two levels of college preparatory courses are differentiated from each other by the number of concepts students must learn in the course. For example, Algebra II Honors Course Student Performance Standards cover six topics not mentioned in the basic Algebra II course, including statistical concepts and matrix algebra. There is little difference in the cognitive level expected of students in Algebra II and Algebra II Honors. The ten standards which two levels of college sequence courses share specify the same level of cognition.

While they cover a wider range of courses at the high school level, Florida guidelines prescribe with a lack of detail. For example, the Florida guidelines do not explicitly define student proficiency in higher order thinking processes as central objectives in the guidelines. The presence of words like "analyze" or "compare" in some of the Course Student Performance Standards imply higher order thinking. However, the Florida Department of Education does not develop, explain identify or defend the place of higher order thinking in the social studies or mathematics curriculum.

The present guidelines provide a broadly prescriptive, commonly formatted system of course descriptions with more specific behavioral objectives. While the social studies guidelines seems more prescriptive than that for mathematics, neither are sufficiently prescriptive to guide teachers in deciding what to teach, when to teach it, and how to teach it. The objectives/sub-objectives format lacks detail, and the manner in which they

are written suggests the possibility of ambiguous interpretation.

Table 1, below, indicates the overall prescriptiveness of Florida's curriculum guidelines according to the eight criteria listed in the introduction to the case studies. The reader will note that Florida's guidelines possess prescriptiveness mainly at the individual course level. However, they lack a broad vision (e.g., California or New York) and specificity at the unit level and below. One result is that teachers and schools are left to make most of their own curriculum decisions.

Table 1-Prescriptiveness of Florida's curriculum guidelines

Dimension of prescriptiveness	Extent of depth and breadth
Overall goals or mission of subject curriculum	none
Course objectives	high
Invariate course sequences	none
Unit objectives	none
Lesson structure & objectives	none
Lesson sequencing	none
Exemplary activities & teaching methods	none
Materials specified	moderate
Overall	low

2. Course Requirements

Compared with Florida's pre-1983 lack of state high school graduation requirements, the state's 1983-1987 graduation requirements are highly prescriptive. The number of courses in each subject and specific courses in social studies are specified. Every course that meets graduation requirements is listed in a course code directory. And every district must offer courses that lead to graduation.

Compared with the other states in this set of papers, Florida requires more courses for graduation. For example, the Florida Department of Education requires three years of mathematics instead of two in New York or California, and Florida's 24 credit minimum exceeds that of either New York or California. In other respects, Florida's course requirements are as prescriptive as California's but not as prescriptive as New York's. Since neither California nor Florida require particular course sequences in mathematics, both are less specific than New York's (where the second mathematics

course must extend the depth of treatment of the first). Also, like California's 1983 model graduation requirements, Florida's requirements are less specific with regard to mathematics than with regard to social studies. Florida specifies particular social studies but not particular mathematics courses.

3. Student Testing Program

Student Minimum Performance Standards define the behavioral objectives that form the basis for the SSAT-I and II. All the objectives in the mathematics portion of the Student Minimum Performance Standards attempt to specify student learning outcomes commonly associated with the traditional content of basic mathematics. Some standards are more specific than others. The Student Minimum Performance Standards booklet identifies basic mathematics "standards" believed appropriate at each of the four grade levels (3,5,8,10). There are 42 grade ten[16] level mathematics standards, grouped into 15 separate standards, such as rounding, estimation, determining percents, multiplying, dividing and handling of decimal points. The booklet identifies several specific skills associated with each standard. For example, the standard "the student will round numbers" includes five basic skills. One such skill (#16) is "round a number less than 100 with no more than three decimal places to any designated place" (FLSMPS, p 28). Such specificity is likely to give teachers a very clear idea of what the SSAT-I will expect of their students.

Many of the Student Minimum Performance Standards listed for the SSAT-II sound less specific than those listed for the SSAT-I. Twelve of the fifteen standards tested in the SSAT-II are phrased "solve problems" or "solve real-world problems" connected with some real-world event, e.g., "comparison shopping" (FLSMPS, p. 48). For example, item #116 prescribes that students must "solve real-world problems involving averages of no more than ten numbers and no more than two distinct operations" (FLSMPS, p. 48). Because it is difficult to know what "solve problems" or "real-world problems" means, the SSAT-II standards for mathematics seem less prescriptive than most of those in the larger basic competency exam, the SSAT-I.

The other area of student testing concerns evaluating student knowledge of the state Course Student Performance Standards in required courses. According to a state official (I have not yet seen these course tests), subject test criteria are highly prescriptive with respect to the state curriculum guides (Respondent III).

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[16] Originally, the high school test was to be given at the end of grade eleven. At some point after the first SSAT was administered, the administration was changed from grade eleven to grade ten. A State official informed me that this change followed concern that students be given more chances to pass the test. Should they fail in grade ten, students would have two years instead of one to pass the test (Respondent III).

4. School Evaluation Policies

School district audits include criteria that evaluate compliance with all existing state curriculum-related laws and regulations. Because of its extensiveness, the audit is prescriptive. However, the limited time and personnel and the audit's reliance on written policy documents makes the audit superficial with respect to the curriculum that is either taught or learned. One week audits covering everything from the physical plant to the curriculum policies in districts with many schools are necessarily limited in depth. For example, Dade County has 260 schools. Unless more staff or more than one week is allotted to the audit visit, the chances of auditors examining the curriculum documents in 260 schools are small.

Furthermore, there is no guarantee that even a documentary evaluation of any particular subject program will occur. The tendency of auditors to investigate discrepancies in more detail may turn the focus of the audit in one of many directions. For example, if the bus maintenance program appears unsafe, ineffective, inefficient or uneconomical, auditors might spend more of their time on this problem and not investigate any of the specific curriculum programs. Finally, even if auditors examine a curriculum subject program, the scope will be K-12. Compliance does not differentiate the K-8 from the 9-12 program.

While covering all important curriculum laws and regulations, the school district audits tend to examine curriculum compliance very broadly. That is, auditors look for evidence that the district has formally adopted or exceeded the Course Student Performance Standards. One department official told me that the curriculum was not a central focus of the audit. According to this official, curriculum guidelines are better evaluated by the state testing system. For the purposes of the audit, the presence of a policy in place was sufficient (Respondent V). In fact, curriculum audit criteria are phrased so as to determine if there is a policy in place (see examples above). Ultimately, by law, districts are responsible for ensuring that curriculum policies are carried out in individual schools.

5. Teacher Certification Policies

The prescriptiveness of Florida's teacher certification policies exceeds that of California and New York. Of the three states, only Florida has a beginning license and regular license that are tied to state-required tests and standards. Of the three states, only Florida controls teacher training institutes through the achievement of its candidates. Of the three states, only Florida requires applicants to pass standardized tests in either college skills or curriculum guidelines-specific knowledge, to take specified numbers of credits outside of the college of education, or to pass an internship in the first year of teaching. Though details on some programs or aspects of programs are minimal (e.g., the adjunct instructor waiver, and the Beginning Teacher Program evaluation), Florida's additional requirements for teacher education programs and candidates are more

extensive and specific than the other states reported in this study.

6. Textbook Policies

Florida's textbook policies are highly prescriptive. Adoption criteria require attention to state curriculum guidelines, minimum competency testing skills and state standards of excellence. One measure of the prescriptiveness of textbook policies is the amount of specificity in the state textbook Instructional Materials Councils Training Manual. The manual is several hundred pages long. It instructs those who will review materials in all aspects of the process. Broken into nine chapters, it details several parts of the process, including the criteria for adoption, how to develop specific criteria based on subject and intended student audience, and the application of criteria.

One of the criteria for textbook selection is the extent to which the textbook reflects the state curriculum guides, called "comprehensiveness" in the adoption manual. To be comprehensive, the content should: 1) match the course description in the Course Student Performance Standards, 2) the basic competency test criteria outlined in the Student Minimum Performance Standards, and 3) the Student Performance Standards of Excellence -- "in depth" (FLIMC, P. III-19, IV-4-6).[17]

A separate section in the manual explains how evaluators should apply adoption criteria. It specifies that evaluators have a copy of the curriculum guidelines for the relevant subject area. They are instructed to match the guidelines to a list of objectives supplied by the publisher. Also, using the textbook index, evaluators should examine passages purported to reflect the "intended outcome in the curriculum framework" (FLIMC, p. IV-5). Evaluators then repeat the process with all the intended outcomes in the curriculum guidelines. The state Materials Council manual recommends that textbook evaluators use the "skills of a content expert," including curriculum supervisors, subject chairpersons, or a representative of a professional subject organization (FLIMC, p. IV-6). The training manual then provides an example from a review of a calculus textbook. Because of its specification that evaluators assess instructional materials in light of curriculum and specify the manner in which they should judge the extent of correlation, the policy seems very prescriptive.

7. The Information System

Indicator information is not presently disseminated on a school-by-school basis. As a result, the indicators of educational progress measure the strength of the curriculum

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[17] However, since some of Student Minimum Performance Standards and the Course Student Performance Standards are not very prescriptive, what constitutes a match between them and instructional materials may vary considerably with the committee members' perceptions.

systems only indirectly. The system is not used to detect and correct weaknesses at the district or school level. The Department of Education can assess the extent to which students on average grasp the basic skills that form the heart of the fundamental mathematics program (one-third of the mathematics courses listed in the Course Code Directory).

In addition, state MIS reports on the four types of indicators are used only to reflect state (as opposed to district or local) progress. However, the school evaluation and management information systems are linked. During the school district audit, a specialist from the state data management system assesses the extent to which the district maintains a data collection system that is consistent with state information requirements. If not, adjustments may be required.

8. Other Policies

(a) School Accountability Program Grants

The School Accountability Program Grants are very prescriptive. The legislation establishing the grant specifies the criteria for receiving grants, time lines for implementation, the specific mathematics and sciences courses that constitute higher level courses, and the specific levels of each of the six indicators schools must meet. For example, there are level 1, 2 and 3 mathematics courses. In order to meet state Department of Education standards for raising the level of students taking higher level mathematics courses, each school must enroll at least ten percent of its students in level 3 courses, 40 percent or more in level 2 courses, and 40 percent or less in level 1 courses. In order to meet promotion criteria, schools must achieve a 95 percent promotion rate by 1992 in grades nine through twelve. Other indicators are treated similarly.

(b) Student Performance Standards of Excellence

The Student Performance Standards of Excellence lack prescriptiveness. A variety of teacher interpretations of the standard, the skill and the connection between the standard and the skill are possible.

C. Authority

1. The Guidelines

The guidelines appeal to two kinds of authority: formal and normative. The formal basis for the guidelines is the 1984 Omnibus Education Act. It requires the development of subject guidelines, and subject matter tests. The normative authority comes from the fact that, unlike California or New York, the guidelines represent what is commonly taught in Florida (and possibly U.S.) schools. For example, instead of basing their courses on an over-arching subject-oriented curriculum conception, Florida writes

guidelines for all possible courses presently taught in the state that could lead to graduation. Florida has not written a formal rationale or justification for its guidelines. Indeed, its provision of courses already grouped by ability (three levels for social studies, three levels for mathematics) emphasizes the state acceptance of common practice of ability stratification in the teaching of required courses in high schools. Unlike the New York or California guidelines, the Florida guidelines do not present themselves as the efforts of subject experts outside of the Department of Education. Florida lists no contributors, expert or non-expert.

2. The Course Requirements

Like almost all Florida curriculum control policies, Florida graduation requirements derive their authority directly from state law. Setting new graduation requirements in the early 1980s placed Florida solidly in the majority of states working to improve their educational systems. In one sense, Florida's requirements appeal to the normative authority lying in the states; in another sense Florida is out of the mainstream by requiring more than other states require.

3. The Student Testing System

(a) the competency tests

The student testing system is part of the educational accountability system instituted by Florida in the late 1970s. The Student Minimum Performance Standards that establish test criteria for the SSAT-I and II were mandated in 1976 and approved by the state Board of Education in 1979. Tests were first administered state-wide in the 1985-86 school year. The tests appeal to both legal and normative authority. Legal authority derives from the legislative mandates to develop minimum standards, enact them and implement them. Beyond that, the process from which the standards arose, according to Student Minimum Performance Standards 1985, involved the advice and consent of many educational groups throughout the state. The process, led by Department of Education consultants, took place over three years and included the following stages:

1) "cooperative" development by the Department of Education, state universities, and local school districts;
2) a two year review of the standards by over two thousand basic skills teachers K-12, The Florida State Reading Council, the Florida Council of Language Arts Supervisors, the Florida Council of Teachers of English, and the Florida Council of Teachers of Mathematics;
3) selected teachers, principals, and lay citizens from 67 school districts then reviewed the standards.
4) a Department of Education task force, the Division of Public Schools Planning Council, the Director of the Division of Public Schools, and

finally, the Commissioner of Education reviewed and approved the revisions (FLSMPS, p.3).

In short, the adoption of Student Minimum Performance Standards took place over a long time and involved the advice and consent of many key actors in the educational policy of Florida. Since the process brought teachers, curriculum supervisors, and subject organizations directly into the consultation process in at least two of the stages, it allowed standards to reflect standards of competency held by school people. In this way, the process appealed to normative authority.

(b) the new course tests

The sources of authority for the new subject testing based on the curriculum guidelines (Course Student Performance Standards) are the same as those for other testing: formal (legal), normative, and expert. The state legislature has required that the Department of Education develop and administer subject area examinations to test knowledge of the subject curriculum guidelines.[18] The development of the test questions appealed directly to normative authority. Test questions arose from the Department of Education contracting with local school districts; teachers and curriculum supervisors throughout the state wrote the questions. Local educators were allowed to review and comment on the subject questions. Following field review, the examinations were field-tested on about 9% of students in regular and 61% of students in honors courses.

4. The School Evaluation System

The school district evaluation system clearly derives its authority from the late 1970 Florida adoption of accountability legislation. Such legislation authorizes the state to monitor schools with respect to state legislation and regulations. Particularly since the main thrust of Florida educational legislation is accountability, the school district accountability audit is highly and legally authoritative.

The audit appeals to legal authority because while individual auditing teams and team leaders may decide what aspects of the school to audit, such decisions are bounded by regulations specified at the state level. Audit criteria and procedures are based on state law and Department of Education regulations; they are written in state guides for auditors. Auditors follow these guidelines, regardless of the particular personnel involved

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[18] The Legislature also required that these examinations be correlated with the national measures of subject knowledge. There are no such tests available. Attempts to borrow test questions from National Assessment of Educational Performance were unsuccessful. At this point, nothing more has been done to correlate state subject tests and national subject tests.

and regardless of what might be common practice in a school district. The audit system appeals to expertise in the sense that the audit team includes consultants from a variety of bureaus responsible for relevant regulations. For instance, if the audit examines curriculum documents, the audit team will include subject specialists. Because the school district audit is one of the oldest pieces of accountability legislation, it appeals to traditional authority. Audits appeal to legal, expert and traditional authority.

5. The Teacher Certification Policies

Like most other curriculum policies in Florida, teacher certification policies arise from legislation and these appeal to the formal (legal) authority of the state legislature and Board of Education. They derive directly from statutes and the authority of the state Board of Education to make rules to implement the statutes. Generally, the state teacher certification policy is authoritative. The state inservice policy appeals only minimally to formal authority.

6. The Textbook Policies

The extent of legislation and regulation governing the selection of textbooks, the involvement of state and non-state subject experts, and the solicitation of consent from local districts indicates that textbook policies in Florida are highly and broadly authoritative.

The amount of legislation and regulation that regulates the adoption process dwarfs that regarding curriculum guidelines policies. Almost the entire adoption criteria and processes are written into state law, including the prescription that textbooks match the curriculum guidelines. The state training manual for state adoption review teams is very extensive; several hundred pages long. It reflects precisely the steps, processes and guidelines specified in the legislation.

State law governing instructional materials also appeals to normative authority. For example, built into the formally specified process are the solicitation of input about texts from local districts. Documents and interviewees claim that state review committee take local input seriously (Respondent III). Law requires that the Department of Education inform local districts of adoptions in subject areas and encourage districts to participate in evaluation of materials using the same criteria as the state review board (FLPPSDIM, pp.8-12). This appeals to the normative authority in that textbooks that districts have already found successful in practice may be more likely to be adopted.

The seeking of advice from curriculum specialists in the adoption process appeals to expert authority. The state training Manual for Materials Council strongly suggests that evaluators seek the advise of subject experts from school districts, or other leading subject organization experts in the state. In practice, how much outside expert advice is sought is unclear. However, from interviews with state officials (e.g., Respondent III), it

is clear that state subject specialists often serve on state textbook councils. Generally, Florida textbook policies for all high school textbooks, including those of mathematics and social studies, are authoritative in several ways.

7. The Management Information System

The collection of quality progress indicators flows directly from the authority of the legislature to require schools to provide information to the Department of Education. For example, 1984 educational legislation requires that the state regularly assess the progress of Florida students with respect to students of other states. The reporting of the SAT and ACT results partly fulfill that requirement. The Department of Education requires that school districts maintain management information systems that will supply the data needed for state reports on the four indicators. Through the district audit, the Department of Education assessed the extent to which the district maintains effective reporting. Ultimately, the Department of Education can require district compliance with information reporting system requirements.

8. Other Policies

Directly authorized by legislation and administered by the accountability section of the state Department of Education, the program grants are highly and legally authoritative. Since many indicators are similar to those used in states like California and New York, they probably reflect widely accepted indicators of educational quality. That is, they appeal to normative authority. Because the legislature mandates their existence, the Student Performance Standards of Excellence are formally authoritative. However, they remain unsupported by any other authority.

D. Power

1. The Guidelines

The guidelines are not particularly powerful. While all districts are required by law to adopt student performance standards identified in the curriculum course guides, compliance is easy to establish. Districts must have adopted the Course Student Performance Standards in formal policies, and maintain curriculum documents that either copy or mimic the state standards. At this point, testing based on the curriculum guidelines is only partly complete. Once the state begins to test students, and if student outcomes on the tests are linked to rewards or sanctions for either students or schools, the guidelines may become more powerful.

2. The Course Requirements

Like graduation requirements in all states, the primary sanction associated with meeting the requirement is students' ability to graduate. Setting new graduation

requirements in the early 1980s placed Florida solidly in the majority of states working to improve their educational systems. However, by requiring 24 graduation credits Florida was out of step with most other states, whose requirements were lower.

3. The Student Testing System

(a) the competency tests

The Student Minimum Performance Standards derive power from the linkage of reading, writing and mathematics testing standards to student graduation. Since all students must past both the SSAT-I and SSAT-II, the tests are powerful, at least in mathematics.[19] The upcoming social studies tests, like the science and computer literacy tests, will be less powerful. Not all students will be required to take the test or achieve a passing score. The social studies test will only lead to program evaluation.

(b) the new course tests

The power of the course tests is minimal. At this point, there are no plans for what to do with the test results. Also, there are only funds to administer two course tests per year. This year only Algebra I and Algebra I Honors will be tested. At this rate several decades will pass before all graduation-required subjects will be tested. Furthermore, there will be no consequences for students. Their success or fail on course tests is unrelated to graduation requirements, or incentives.

4. The School Evaluation System

Despite (or because of) its strong formal authority, there is little actual power in the audit follow-up process to require compliance. According a state official, compliance problems are usually resolved by phone calls and exchanges of documents. Each audit performance summary identifies areas of compliance and non-compliance, and actions required to reach compliance. Presumably, violations of state law could be prosecuted by the state in the courts; there are no penalties the Department of Education can administer.

The Department of Education does not have any powers to revoke schools' permission to operate or fine schools or reduce funding for non-compliance with the

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[19] The tests originally raised concerns about their power. Both tests were challenged in court, though the challenges have, to-date, failed. Debra v. Turlington challenged the validity of the SSAT-II. The judge ruled that the test was valid. The history of the conflicts is too lengthy to develop in this paper, but Freeman (1983) reports them in his analysis of state elementary mathematics policies.

school district audit. However, according to the manager of the audit system, schools comply rapidly with Department of Education audit action requirements. Often district correction of deficiencies noted in the audit involves the submission of documents to verify compliance (Respondent V). In the follow-up process, auditors are advised to use "telephone contacts, technical assistance, or correspondence" to follow up on compliance (FLCCP, p. 14). These facts suggest that the authority of the school audit is so substantial that the use of power to insure compliance is unnecessary.

Despite the lack of sanctioning or rewarding power, the school district audit program seems sufficient to insure district compliance with Florida state education laws. By issuing lists of items not in compliance and by setting deadlines for compliance, auditors produce rapid compliance. The expectation of enforcement may produce this level of compliance. In the history of the system, not one high school has ever failed to show that it follows the state curriculum guidelines (Respondent V).

5. The Teacher Certification Policies

The power of the certification policies is in the ability to withhold certification and therefore prevent practice. The legislative power of teacher certification extends beyond the ability to withhold certification from individuals to the power to withhold certification from teacher training programs. According to Department of Education officials familiar with certification, since the law took effect, several smaller teacher training programs were hurt the most. In small programs, the 80% pass rate can be devastating. For example, if there were only four candidates, and one failed, a program could lose certification (Respondent IV).

Since the replacement of the basic skills test with the CLAST test, some teacher certification testing consultants are not sure whether the 80% rule applies to CLAST test results. According to a legislative consultant, the power is there, should the state choose to exercise it. Neither California nor New York allot this much power to teacher certification; they allow state teacher training institutions to establish standards for graduation from pre-service education.

There are gaps in Florida's application of the potential sanctioning power connected with state teacher certification standards. The exceptions to and changes in the certification process since the 1983 reforms tend to dilute the power of the certification process. Due to rapidly rising student populations and shortages of teachers in specific programs and areas of the state, the legislature has allowed schools to certify individuals who have not fulfilled the basic requirements. With these exceptions, the state teacher certification policy is powerful. The state inservice policy is not powerful (no sanctions or rewards).

6. The Textbook Policies

The fact that the state finances textbook selections for texts on the state-approved list indicates that the power of reward backs the authority of the system. The state uses monetary incentives to encourage local selection of state-approved materials. Districts are free to use whatever materials they wish. However, they can only use up to one-half of their textbook funds for non-approved materials. Given this incentive, school districts may be more willing to participate in the evaluation process. If such participation increases the likelihood of the state adopting materials suitable to one's district, the financial benefit may be significant. Generally, Florida textbook policies for all high school textbooks, including those of mathematics and social studies, are relatively powerful, especially when compared to New York and California. Neither California nor New York require a state review of instructional materials for high school students.

7. The Management Information System

The collection of quality progress indicators flows directly from the power of the legislature to require schools to provide information to the Department of Education. For example, 1984 educational legislation requires that the state regularly assess the progress of Florida students with respect to other students of other states. The reporting of the SAT and ACT results partly fulfill that requirement. The Department of Education requires that school districts maintain management information systems that will supply the data needed for state reports on the four indicators. Through the district audit, the Department of Education assessed the extent to which the district maintains effective reporting. Ultimately, the Department of Education can require district compliance with information reporting system requirements. Nonetheless, as a curriculum policy, the Management Information System is not especially powerful. The Department of Education does not use MIS quality indicators to reward schools, teachers or students. However, the program quality indicators in the SAPG program may alter the reward structure. At this time it is not clear whether the Legislature's new SAPG program quality education indicators will either substitute the MIS indicators of educational quality, supplement them or undermine them.

8. Other Policies

Unlike other curriculum policies, the accountability program grants carry financial incentives with them. Whether the amount is a sufficient incentive is not clear. Should schools with enrollments of 2,000 or more students meet the requirements of four indicators, they can receive an additional $25,000 a year. This would cover the cost of the average salary of one teacher in Florida. The Student Performance Standards of Excellence lack the power of sanction or reward.

IV. CONCLUSIONS

As Florida begins to link more educational policies to the curriculum guidelines, it moves closer to a strong curriculum control system. At this point, the curriculum guidelines vary in prescriptiveness; they are not consistent with all policies; they are formally and normatively authoritative but lack power. The state legislature's mandate that local districts adopt the state curriculum standards seems to have been realized. But whether and how local districts implement the state standards is unknown. Since 1984, Florida's legally-authoritative approach to state-developed curriculum guidelines has gained in prescriptiveness and consistency and therefore in policy strength. However, at this point, the curriculum guidelines are not as clearly central to or entrenched in the state Department of Education as are the accountability policies, like the SSAT-I and II student competency testing policies.

The post-1983 Florida student course requirements are minimally connected with other curriculum policies. The requirements prescribe more required courses credits than either New York or California. Nonetheless, while the state requires three years of mathematics, the courses students may take to meet those requirements can vary dramatically. Some students may take Algebra I, Geometry, Algebra II/Trigonometry. Others may take three years of basic mathematics courses, all of which teach mostly the same content. The state does provide minimally prescriptive guidelines for each course that can meet graduation requirements, and audits each district to ensure that the district offers courses that meet graduation requirements. The requirements are backed by the authority of the state legislature and the power to withhold graduation. However, how the state intends districts to interpret graduation course requirements and how districts interpret what meets those requirements may differ dramatically.

Florida conducts an extensive basic skills student testing program. It also is beginning a subject testing program to assess student knowledge of courses required for graduation. The competency testing program forms a major part of the accountability thrust in Florida. Yet, only one of the two competency tests, the SSAT-II, is powerful. Students must pass it to graduate. Students only have to take the SSAT-I; no state official knows whether any student ever received enough remediation to master the SSAT-I competencies. More importantly, competency tests do not adequately test the state-prescribed curriculum. The SSAT-I and II together cover only the state's official curriculum guidelines (the Course Student Performance Standards) for basic mathematics courses. If state officials reports are correct, the new course tests will examine student knowledge of the state curriculum guidelines. However, these latter tests have yet to be implemented fully.

The school evaluation system is highly authoritative, broadly prescriptive and consistent with almost every other curriculum control policy. The state legislature has expected educational accountability from most of its educationally-oriented legislation. The school district audit is one of the oldest pieces of such accountability efforts. With

the growth of state educational legislation, the school district audit grows in scope. In this way, the Florida Department of Education can report the extent to which school district formal policies match those of the Department of Education. The audit looks for the presence of all major curriculum policies and is therefore linked to every major curriculum (and many non-curriculum policies). Despite its authority, the school district audit lacks specificity with regard to curriculum policies. The time needed to evaluate the consistency of the high school "taught" or "learned" curriculum is far beyond that allocated time (one week) to audit an entire district. By necessity, the process focuses mainly on a documentary examination.

Teacher certification policies are legally authoritative, powerful and prescriptive. Such policies are consistent with the curriculum guidelines as well as the general thrust of the Department of Education to increase teacher subject knowledge of the content they are expected to teach. College-level and specific subject area certification tests in areas of expertise assert the primacy of curriculum knowledge and reinforce the importance of teacher knowledge of curriculum guidelines. Audits match teaching with certification, and check for the existence of a school inservice plan for teachers. Despite much inservice activity by subject specialists, there is no state inservice plan in mathematics or social studies. The teacher certification policies are linked to the curriculum guides and the school audit, but not to student courses or student testing, or to the management information system, or the textbook policies. In comparison to the other states studied in this report, Florida most explicitly attempts to control the pre-service knowledge of subjects mathematics and social studies teachers will teach.

Florida's textbook policies for high school mathematics and social studies appeal to many kinds of authority, are consistent with other major curriculum policies, and are highly prescriptive. Compared to California and New York, where the state does not regulate the adoption of high school instructional materials, Florida provides a strong materials policy that correlates with most other curriculum policies. The potential strength of state instructional materials policies seems much greater in Florida than in the other states studied here.

Florida maintains an information system that collects data on the progress toward educational excellence. However, the system is only indirectly related to most of the other curriculum system elements. What the state reports as indicators of excellence loosely correlate with the state-recommended curriculum guidelines, course requirements, testing of curriculum knowledge or teacher certification and inservice. Like New York and California, Florida has not yet closed the gap between its curriculum guidelines and its generation of quantitative indicators that reflect educational excellence. Potential conflict between the Management Information System and the new accountability program grants exists. The seriousness of that conflict is unknown at this time.

The program accountability grants, while contradicting previous state conceptions of program quality already reported by the Management Information System, are

indirectly connected with course requirements. There is no formal connection between the curriculum guidelines, textbook policies, school evaluation policies, or student testing policies and the School Accountability Program Grants. Though formally authoritative, the power of the policies hinges on whether districts consider the extra money worth the trouble involved in proving to the state Department of Education that they have met standards specified in some detail by the legislation. To judge the program's strength in its infancy would be unwise. However, at this point, the policy does not appear to strengthen other curriculum policies, and it appears to contradict the authority of Management Information System measures of educational quality.

The Student Performance Standards of Excellence program appears to be largely symbolic. Since the legislature required their development in the 1984 Omnibus Act, the state Department of Education wrote and published them, but the Department has not found significant ways to integrate them into their curriculum guidelines, the student tests, the Management Information System, school audits, or teacher certification/inservice. The Standards of Excellence Program is unconnected with other curriculum programs except the textbook adoption policies. In particular, the misreporting of indicators of excellence has nothing to do with the Student Performance Standards of Excellence. In the textbook policies, textbooks must be selected with standards in mind. The Student Performance Standards of Excellence lack prescriptiveness. A variety of teacher interpretations of the standard, the skill and the connection between the standard and the skill are possible. Because the legislature mandates their existence, the Student Performance Standards of Excellence are formally authoritative. However, they remain unsupported by any other authority, and lack the power of sanction or reward. Combined with their lack of connection with almost all other curriculum policies, this lack of power and perhaps authority may make the application of the SPSEs unlikely at the school level.

Table 2 summarizes the findings of the Florida case study. Florida's strongest policy areas are instructional materials, student tests, and teacher certification. The weakest area is the information system.

Table 2-Overall policy strength of Florida's curriculum control policies

Policy	Consistent	Prescriptive	Authority	Power
Curriculum Guidelines-basics	high	moderate	law (e) norms (i)	moderate (s)
Curriculum Guidelines-other	low	low	law (e)	low (s)
Course Requirements	low	low	law (e)	moderate (s)
Student Tests	high	high	state law (e) case law (e) expertise (i)	high (s)
School Evaluation	moderate	low	law (e) tradition (i)	moderate (s)
Program Accountability Grants	low	high	law (e)	low (r)
Teacher Certification/Staff Development	low	moderate	law (e)	high (r)
Instructional Materials	high	moderate	law (e) expertise (e)	moderate
Informational System	low	low	law (e)	none
Overall	low	moderate	moderate	moderate

e=authority explicitly stated in documents or interviews
i=authority implicit in policies or implementation of policies
s=sanctioning power
r=reward power

ABBREVIATIONS FOR FLORIDA CASE STUDY

FL84	Florida Omnibus Educational Act of 1984
FLSUM83	Florida legislative summary for 1983
FL84SUM	Florida analysis and summary of 1984 educational legislation
FL86SUM	Florida analysis and summary of 1986 educational legislation
FLFMALG	Florida Curriculum Guidelines for Algebra I
FLFSSAH	Florida Curriculum Guidelines for American History Honors
FLFMALGH	Florida Curriculum Guidelines for Algebra I Honors
FLFGMI	Florida Curriculum Guidelines for General Mathematics I
FLCCD	Florida Course Code Directory
FLSMPS	Florida Student Minimum Performance Standards
FLSPSE	Student Performance Standards of Excellence
FLACOL	Florida Accountability Program Audit of Collier County
FLLEVY	Florida Accountability Program Audit of Levy County
FLSAPG	School Accountability Program Grants
FL236.1228	Florida Statutes establishing SAPGs
FLMIS	Management Information System
FLCCMSCR	Florida Comprehensive Compliance Monitoring System Criteria
FLCCP	Florida Comprehensive Compliance System Procedures
Freeman83	Don Freeman's 1983 summary of Florida Curriculum Policies
FLCLAST	College Level basic skills test
FLCH231	Florida Statutes, chapter 231
FLTCERT	Florida Teacher certification regulations
FLCTSS	Florida teachers' certification test in social studies
FLAP	Florida Adoption program handout
FLIMC	Florida Instructional Materials Council Training Manual
FLPPSDIM	Florida Policies and Procedures for State and District Instructional Materials

THE STRENGTH OF NEW YORK CURRICULUM CONTROLS

I. INTRODUCTION

This study of New York curriculum control systems investigated seven policy areas: 1) curriculum guidelines, 2) graduation course requirements, 3) student testing, 4) school evaluation, 5) teacher certification, 6) instructional materials selection, and 7) information systems. These policy areas were evaluated in terms of four criteria: consistency, prescriptiveness, authority and power. The policy areas have a moderate degree of consistency with each other. Generally, the policy areas show moderate levels of prescriptiveness, authority and power. Generally, according to the characteristics used in this study, New York has neither a strong, nor a weak curriculum control system.

New York State recommends, but does not mandate, the use of state syllabi. Public school administrators receive general information on the state syllabi and the state curriculum policies; public schools receive copies of the syllabi and presumably all public high school mathematics and social studies teachers are familiar with state syllabi for a particular course or sequence of courses. The New York State Education Department assumes that syllabi serve as guides to good subject instruction. Schools not needing assistance have complete autonomy to develop whatever local syllabi they choose. New York State social studies and mathematics curriculum guidelines policies focus on state syllabi that are highly authoritative, powerful, prescriptive and consistent with most other curriculum control policies at the state level. Their authority is based mainly on law and expertise, though there are elements of normative authority. The power of the guidelines is due mainly to the sanctions that can result from poor student test results. Both students and schools can be sanctioned for low test scores. Both the social studies and math syllabi prescribe major elements of the content and teaching processes for the courses approved for Regents credit (Math I & II, Global Studies, and American History/Government).

Student course requirements directly reinforce the state guidelines in social studies and mathematics. The Commissioner's regulations for local, Regents and honors diplomas require that students take mathematics and social studies courses described by the syllabi. Students cannot get diploma credit unless these courses follow state syllabi or have specific approval from the department. In short, students who expect to graduate with a Regents diploma must take some Regents-approved courses, and such courses must follow the state syllabi to be offered for Regents credit. New York's course requirements policy is highly prescriptive and closely linked to the State curriculum guidelines.

The New York student testing policies for mathematics and social studies are highly prescriptive, consistent with the state curriculum frameworks, powerful and authoritative. In fact, student testing seems to be the hub around which other policies rotate.

School evaluation in New York State is now evolving from a less to a more powerful system for control over student achievement outcomes. School evaluation is becoming more restrictive, authoritative, powerful and consistent with other state policies. However, most of this power is not directly linked to alignment of the state guidelines for social studies and mathematics instruction.

Staff development is indirectly related to the curriculum frameworks in several ways. State math and social studies guidelines connect more closely to staff development than to teacher certification. The policies of teacher training institutions and subject matter organizations are more consistent with the frameworks than with state teacher certification requirements. Staff development is linked to professional subject organizations, state syllabi, school improvement policies and the policies of teacher training institutions. New York State Education Department subject matter specialists see themselves as service providers, helping teachers to work with the syllabi at the local level. Teacher certification and development policies in New York exhibit only low or moderate levels of consistency, prescriptiveness, authority, and power.

The policy of the New York State Education Department is to allow local schools to use any textbooks or curriculum materials for any course they offer. Theoretically, high schools in New York could use no textbook at all. Since the New York I-II-III sequence is relatively new in the United States, only a few publishers offer texts consistent with the I-II-III approach or content. However, more publishers may begin producing texts that could be used in I-II-III. In time, other states, and other districts and schools in other states would probably adopt versions of the National Council of Teachers of Mathematics standards soon (Respondent A). New York's instruction materials policy rates low in all analytical criteria.

The New York State Education Department's Information Center on Education (ICE) collects, processes and interprets information whose collection is mandated by law and the Commissioner's regulations on education. It manages most of the information the New York State Education Department gives to and collects from local districts. One of its chief functions is to maintain a data base, the Basic Educational Data System (BEDS), on staff, student and community characteristics of 700+ public school districts.

Basic Educational Data Systems data allows the processing of student testing results whose data provide indices of syllabus-monitoring and school evaluation. The New York State Education Department typically requires that schools whose students test in the lowest ten to fifteen percent of state secondary schools (in reading, writing or mathematics) will produce a Comprehensive School Improvement Plan (CSIP), largely based on effective schools correlates. The Information Center on Education processes norm-referenced test results to conduct school evaluations, monitor teacher certification, and allows the Commissioner to prescribe plans for syllabus-adherence and staff development. The Information Center on Education allows the New York State Education Department to monitor indirectly the extent to which the state syllabi are

reflected in instructional outcomes. New York's informational system shows moderate or high levels of consistency, prescriptiveness, authority, and power.

II. POLICY DESCRIPTIONS

A. Curriculum Guidelines

New York State develops, recommends and encourages but, with few exceptions, does not mandate the use of state syllabi in any subject.

> In grades kindergarten through twelve, the use of a State syllabus, where available is recommended for all subjects. The use of State syllabus may be required for individual schools identified....as being in need of assistance (NYPART100, 100.2 (b)).

Schools "in need of assistance" are those whose student tests fall into the bottom ten to fifteen percent of all New York schools (Respondent F). In general, the New York State Education Department assumes that syllabi serve as guides to good subject instruction. Schools not needing assistance have complete autonomy to develop whatever local syllabi they choose. Formally, state syllabi are to be adapted to local needs. However, there seems to be less latitude intended in mathematics than in social studies syllabi:

> (Excerpt from Global Studies syllabus) This syllabus is a guide to curriculum development. It is a statement of the goals and objectives of the State social studies program. It is not meant to offer day-to-day lesson plans. Rather, it should be used by administrators and teachers as a guide to the selection of strategies and materials to achieve these goals and objectives (NYSGSSS, p.1).

> (Excerpt from Mathematics I syllabus) It is estimated that the first four section present here can be handled comfortably by most classes in 150 school days....It is expected that individual teachers will consider their students' abilities and interests in making judgments concerning time allotments, aspects of the material to be stressed, or extra material to be presented....It should be noted that teachers need not present topics in the order given in this outline (NYSMIM, p.1).

Despite the formal autonomy of local schools testing, course, staff development, and school evaluation requirements tend to make the adoption of state syllabi easier, and non-adoption problematic.

State syllabi in social studies include: Global Studies (covers grades 9 and 10), American History (grade 11), and Economics and Participation in Government (grade

12). In mathematics, there are several syllabi, four of which are required for either a local or Regents diploma: Mathematics I, Mathematics II, Mathematics III, and a separate syllabus for General Mathematics.[1]

Subject bureaus at the New York State Education Department are required by regulation to assess periodically whether current syllabi are up to date. Since 1985, both the mathematics and social studies high school syllabi have undergone major revisions to bring them into line with the latest curriculum approaches promoted by national subject organizations. New syllabi are written and revised by the Division of Curriculum Development, commonly in cooperation with a committee composed of subject matter experts and advocates. Upon writing or revision, such syllabi are field-tested in state schools and revised with teacher comments in mind. After field-testing, the revised syllabi are distributed and information on their use is disseminated through a "turnkey" training process, described elsewhere in this report (teacher certification/staff development). Teachers can receive further training in the use of the syllabi through Boards of Cooperative Educational Services-coordinated inservices from subject bureau specialists, or from local colleges for credit (Respondent A). Once the New York Education Department has disseminated information on the syllabi and trained subject teachers in its use, subject bureaus develop Regents comprehensive and competency tests based directly on the syllabus content (Respondent B).

1. The Social Studies Guidelines

The new secondary social studies guidelines cover grades seven through twelve. Each syllabus begins with an explanation of how to use the syllabus. The goals of the Regents, social studies 7-12 goals, how the Regents and social studies goals intersect, a twelve-page description of skills in the social studies to be part of every course, and a list of knowledge, skills and attitude objectives for students taking the course are included in each syllabus. The rest of the syllabi break down these larger objectives into units of study, each containing a content outline, a list of major ideas and model activities.

The ninth and tenth grade syllabus is called Global Studies. It appears to be a combination of what used to be world history, geography and area studies. It is designed to produce in students an awareness of their heritage as members of Western civilization; it is also meant to produce awareness and understanding of cultures other than those in the West (NYGSSS, p.21). The eleventh grade syllabus covers American History and

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[1] In mathematics, the only courses not necessary for Regents credit are advanced classes (e.g., pre-calculus, calculus, analytical geometry) and there are no syllabi or state tests available in these subjects. Social studies courses not required for Regents credit are senior year electives. The State Education Department recommends and provides a syllabus for Economics and Participation in Government; there are no state tests for either of these subjects.)

Government. This appears to combine what might have been previously taught as separate courses in Government and American History. Its writers intend the syllabus to teach students about the development of public policies over time, and to help them understand and form reasoned opinions about recurring and enduring policy issues, particularly those arising out of constitutional issues. For each of the foregoing syllabi, there are matching competency and Regents examinations; students must take one or the other. The twelfth grade recommended syllabi are Economics and Participation in Government. Neither are required and there are no examinations for either. The Economics syllabus is meant to focus on economic public policy decision-making. The Participation in Government is designed to engage students in activities the bureau believes are critical to representative democracy. According to the American History syllabus, the eleventh year program should prepare students for the twelfth year. There are no Regents comprehensive or competency tests available for the twelfth grade syllabi.

2. The Mathematics Guidelines

As in social studies, the mathematics guidelines revise traditional course offerings in the subject, incorporating current ideas about what content and practices are necessary to the teaching of high school mathematics. Unlike social studies, the new mathematics curriculum is more obviously stratified. The college-bound will take Mathematics I-II-III. Those not college bound will take General Mathematics and some other course that "deepens" their understanding of general mathematics (Respondent A, CR 100.5).

Since 1976, revisions of the mathematics syllabi similar to the present versions have been promoted on the state level. During the same time, national mathematics organizations have pressed for major changes in the teaching of mathematics. The most controversial change in New York mathematics syllabi has been the creation of the integrated Mathematics I-II-III sequence for the college-bound student. The New York Education Department announced its statewide adoption in 1984. Prior to that, such students took separate algebra-geometry-trigonometry course sequences.

Present syllabi argue that the division of these subjects was artificial, and that students need more background in probability and statistics, and that mathematical reasoning and problem-solving deserve more attention (NYSMIM). Similarly to the California mathematics framework, the New York mathematics syllabi speak of teaching through a spiraling process, meaning that they return to previous concepts and develop them in greater complexity or depth in later courses. The I-II-III sequence syllabi have met with criticism from practitioners. The most recent revisions (1989) have apparently resulted in part from college and high school teachers' dissatisfaction with earlier versions of the syllabi (Respondent A). At this time (August, 1989), after four years of development, feedback and three-year phasing-in of the I-II-III sequence, Course III is being implemented and tested by state comprehensive exams. There are comprehensive tests for all of the Mathematics I-II-III courses, and one competency test for General

Mathematics. Other mathematics courses and syllabi have no corresponding Regents examinations.

The recent developments in mathematics for the college-bound do not appear to have changed much of mathematics syllabus for those not bound for college. The dates on the revisions of the I-II-III sequence and general mathematics curriculum reveal this. The I-II-III sequence are just finishing their three-year implementation phase-in process. The General Mathematics syllabus is dated August 1978. Since most of the changes in the I-II-III sequence deal with changes in the teaching of algebra, geometry and trigonometry, the lack of changes in the General Mathematics syllabus makes sense. As the General Mathematics syllabus notes, General Mathematics avoids algebra; it teaches a simplified form of geometry. The bureau considers the "formality of structure" in algebra (and by implication theoretical expositions in geometry and trigonometry) too rigorous for some students (NYGMM, p.1). However, the General Mathematics syllabus does address elementary statistical and mathematical reasoning (NYGMM, pp. 45-47, 66-68). According to the syllabus and an interview with a state official, General Mathematics should lead to either occupational mathematics courses (e. g., business math, computer math) or to course I for the college bound (Respondent A).

B. Course Requirements Policy

Students must take four years of social studies and two years of mathematics. Social studies courses must include one year of American History, and a half-year of both Economics and Participation in Government. Mathematics courses must begin with either General Mathematics, Business Mathematics (only for students in a business program) or Mathematics I. Following this, students who took Mathematics I must take Mathematics II. Other students must take a course that must "deepen or broaden" understandings in the first course. That could include taking Mathematics I, business, computer, or other occupationally-oriented mathematics courses.

To receive a local diploma (about 51-52% of all graduates receive this), students must (in addition to other subject requirements) pass two sequential courses in mathematics (any two), and pass 4 years of social studies classes, including American History, Economics and Participation in Government or a New York State Education Department-approved substitute course or experience. For a Regent's diploma, additional requirements involve three complicated sequence options (see C.R. 100.5 (b)(2)(i) and (c)(2)). These requirements are designed to make students not in occupational programs take complete departmental sequences in one or more academic areas. The combination of the local diploma requirement for a sequence of two mathematics courses and the Regents' diploma sequences results in a minimum of two courses in mathematics. Three-sequence and five-sequence mathematics course options can also lead to a Regents diploma. The honors diploma requires percentile equivalent scores of 90% or higher.

C. Student Testing Policies

At the secondary level, there are mainly two kinds of student tests, the Regent's competency (henceforth competency) and comprehensive examinations (henceforth Regents). Subject bureaus prepare these achievement tests to "evaluate the quality of the instruction and learning that have taken place" (NYRECT, P.1). About sixty percent of New York State students take one or more Regents examinations. About half of the graduating students take competency examinations, while the other half demonstrate subject knowledge through Regents examinations. Students must pass tests for first year mathematics (mathematics competency or math I-Regents), and American History/Government (competency or Regents) in order to receive a high school diploma (CR 100.5). In order to receive a Regents diploma, students must pass Regents examinations (or an officially-approved equivalent) in Global Studies, American History/Government and each of the Mathematics I-II-III sequence courses. Teachers administer and score both competency and Regents examinations. Each subject bureau conducts a summer review of a random sample of scored tests to assess to what extent local teachers' scores reflect subject bureau expectations (Respondent B).

Schools must give students who fail competency tests "appropriate remedial instruction" prior to graduation in order to allow them to pass (NYPART100, NYRECT, p. 19). Students who fail Regents tests may retake them, and be allowed to have the highest score recorded. Students who pass Regents comprehensives may receive a Regents-endorsed diploma. Students who score in at least the 90th percentile can receive an honors diploma (also see course requirements). The New York State Education Department has established SAT and ACT scores it believes match particular Regents and competency passing scores (NYRECT).

Test scores are norm-referenced with regard to New York State students. On this basis, state reference points are chosen to identify the lowest-performing schools for school improvement. The Information Center on Education produces percentile rankings of student test scores by county, school district, region, and urbanicity of the school for each of the major competency and Regents exams.

Both types of mathematics and social studies exams contain content- and skills-oriented questions. The mathematics competency test uses only multiple choice questions, while both the social studies competency and Regents exams include essay questions. Tests in social studies include both multiple-choice objective questions and essay questions. Mathematics I-II-III course tests use both multiple-choice objective tests and mathematical problems on which students are required to show their work.

D. The School Evaluation Policy

The New York State Education Department has traditionally assumed the right and obligation to insure that its secondary schools comply with educational regulations,

health and safety regulations, and providing adequate instruction. Registrations occur once every five years for all state public high schools. Usually the examination of the school takes one to two days (Respondent C). During that time a supervisor or associate from the School Registration Bureau will evaluate everything from the safety of the physical plant to curriculum adherence (i.e., whether courses offered for Regents credit use a state syllabus). Supervisors examine school records, investigate the building condition, and interview school administrators, some students and teachers. Couched in terms of effective school correlates language, written reports to the district summarize the outcomes of the review. If the review finds the school in compliance, then the school will be reviewed again in five years. In areas where schools fail to comply, the state bureau will place schools on a "deferred" status. The bureau will send referrals to other relevant agencies to insure compliance. The registration process usually covers schools with adequate pupil test scores and required changes are usually less drastic than those in the school improvement plans (the lowest ten to fifteen percent). Under the old regulations, the state cannot revoke school registration. But in practice, the New York State Education Department would defer registration indeterminately or until districts complied.

After a five-year evaluation of the school improvement plan (a copy was requested but has not been received yet), the department found the school improvement plan inadequate. First, the New York State Education Department found that the problems of low-performing schools went beyond establishing a school-wide effectiveness plan. Such schools failed to get the extra resources needed to deal with poor education connected with high percentages of minority and low income communities (Respondent D), and tracking plans that stratified students by race, gender or socio-economic status (Respondent E).

The context in which new regulations regarding school registration and school improvement plans is important. Several New York State Education Department persons pointed out that most of the problem schools are in New York City. It is here that the New York State Education Department hopes to improve test scores the most. And it is here that the New York State Education Department hopes to use the newly authorized clout to make schools improve. It is hard to get a picture of the politics behind this, but such a picture might give some perspective on the major changes in accountability.

Another part of the Accountability and Excellence Program is the focus on excellence. The department plans to identify excellent schools, identify what makes them excellent and have other schools emulate their successful practices. The press for excellence is at least partly due to the influence of one or more Regents who want to see the New York State Education Department focus on non-problem schools (Respondent E).

After many meetings over the last year, the Regents now (since the summer of 1989) will require low performing districts to improve over a one year period or lose their registration as a state-approved school. Under the new regulations, the New York State Education Department will require, through its Accountability and Excellence Program, both district and school reporting of educational information. The program will require districts to submit even more specific information than previously required in the school's Comprehensive Assessment Report. For example, the accountability program will now require districts to submit student testing and career choice data by race, gender and social class. This information can then become evidence for a registration review by the New York State Education Department. All districts will be required to produce a plan for excellence. In addition to high schools, middle and elementary schools will be added to the normal five year registration review. In order to encourage school improvement for the 85 to 90 percent of adequately performing schools, the accountability program will sponsor two-year pilot projects to help districts develop and implement long range standards for educational excellence. Finally, the accountability program will seek out districts with exemplary performance and disseminate information on successful programs and activities (NYAEP, Respondent E).

E. The Teacher Certification Policies

1. Certification

New York Education Law (NYEd.L. 3001(2), 3009, RR 7.3), and the Commissioner's regulations (7.2) require that all public school teachers be certified in the subjects they teach. According to the Teacher Certification Bureau, secondary teachers must:

1) take 12 semester hours of professional education courses;
2) complete student teaching;
3) pass a "core battery" test that includes general knowledge and skills; and
4) possess a baccalaureate degree.

In addition, secondary social studies teachers must complete thirty-six hours of college instruction in social studies classes; there is no specification as to what kind of courses. Mathematics teachers must complete twenty-four hours of course work in college mathematics, and six of these must be in calculus.

Despite minimal certification requirements, college teacher training and summer "refresher" courses in the state reportedly familiarize candidates and teaching veterans with the state syllabi (Respondent A). They do so not because of legal requirements but rather due to the leadership of subject organizations and the market demand for summer instruction about the frameworks (Respondent A). In mathematics, the Associated Mathematics Teachers of New York State (AMTNYS) plays a strong role in setting standards for mathematics content and teaching practice. In social studies, two

organizations play similar roles with respect to teacher training: the State Supervisors of Social Studies and the State Council for the Social Studies.

2. Staff Development

New York State does not require that mathematics and social studies teachers receive any specific amount of staff development or training in existing syllabi. However, the content of new syllabi are systematically disseminated through a hierarchical training network, called the "turnkey" training system. In addition, the state recommends (but does not pay for) ten days of teacher inservice per year in order to enrich teachers' instructional knowledge and skills. Furthermore, the state provides resources for subject matter supervisors to conduct inservice on the state curriculum when requested through boards of Cooperative Educational Services. Finally, when school improvement plans call for improved teaching in subjects, subject matter supervisors are expected to provide whatever curriculum help might be necessary. Professional development needs to enhance the link between local practice and state syllabi are also met by state subject professional organizations, and by teacher education institutions in the state (Respondent B, Respondent A, NYSD).

3. Turnkey Training

When syllabi are revised, subject bureaus conduct a series of turnkey training sessions to help insure that new syllabi are taught as designed. The system begins with selecting exemplary teachers (50) throughout the state and having state subject experts (master trainers) train the 50 selected teachers as turnkey trainers for a day or two. Turnkey trainers, with state supplied materials, then train (one day inservice) other teachers as they themselves were taught, usually at the level of the city or boards of Cooperative Educational Services. As a result, most classroom teachers in a subject receive initial training consistent with the subject bureau's intent in the new syllabi (though the New York State Education Department does not know the extent to which this is true). After turnkey training, teachers may receive additional training in the syllabi due to low pupil subject test scores (i.e., teachers at schools in need of improvement), teacher license updates, teacher's pursuit of higher degrees, or as part of a request from the boards of Cooperative Educational Services to the bureau from district subject staff who want to use their regular inservice days to refresh their knowledge of the curricula. Initial turnkey training is highly prescriptive and consistent with state syllabi due to the hierarchical control training method.[2]

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[2] Turnkey documents reveal this. I have no documents on subsequent training, and am unsure to what extent further training in the syllabi matches the original training in prescriptiveness.

4. Inservice Training

Subject bureau inservices often result from requests from boards of Cooperative Educational Services, and are often directed toward improving teachers' understandings of the state syllabi. Curriculum bureau officials call these sessions workshops, and are usually presented to regional groups, not to individual districts. The Math Bureau conducts about 35-50 workshops on the Math I-II-III sequence. The social studies department conducts about 70-75 workshops a year (includes K-12) on the syllabi. State experts with whom I spoke indicated that such workshops are well-received by teachers, indicating some measure of normative authority.[3] The mathematics, but not social studies, bureau also serves as the main source of help for lower-performing schools. A school improvement plan, authorized by the Commissioner of Education and backed by the power of school registration compliance, may call for improvement in the teaching of math, reading or writing. Aligning of the local curriculum might take as much as eight to ten days in just one low-performing school. Such work was New York State Education Department priority (Respondent A). Since low social studies scores do not place secondary schools on the low-performing school list (NYAEP), social studies bureau personnel do not spend much if any time on helping schools to comply with state syllabi. New York State Education Department bureau workshops are free, and schools apparently prefer such inservices to that of private providers (Respondent A). New York State Education Department subject bureau workshops can vary in content, style and length. However, both bureaus have a booklet designed to guide workshop leaders in the new syllabi in each bureau. These are called "Leaders (sic) Guides." Because they refer to implementing new syllabi, these documents appear to be related to turnkey training. Other more popular sources of inservice are summer courses in the subject syllabi at local teacher training colleges.

5. Networking

Regional districts play key roles in information gathering, dissemination, and staff training. The New York State Education Department attempts to enhance its ability to disseminate syllabi information by the creation of a "Staff and Curriculum Development Network." This network includes state and regional (Big City and Boards of Cooperative Educational Services) officials, and a member from the Effective Schools Consortium. Called "S/CDN," the network encourages the sharing of staff development and syllabi

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[3] Because both the secondary mathematics and social studies are very new, the level of normative authority is not as high as it might be after several years of application. A state official referred to teacher acceptance of the curricula as in a "state of transition" (Respondent B). The math supervisor pointed out that the I-II-III has both old (they still teach mainly algebra and geometry) and new elements (probability and statistics). For more on this see the "frameworks" section.

process and content, or more bluntly, "to insure impact on school districts, teachers, and students" (NYS/CDN, p. 1). Through the Effective Schools Consortium direction, local districts and schools can experience more consistent turnkey and follow-up training. A second function of the Effective Schools Consortium is to disseminate information on effective school and instructional practices (NYS/CDN, p. 2). The relationship between the Effective Schools Consortium and the Educational Accountability Program is unclear. From Educational Accountability Program documents, it would appear the Educational Accountability Program will transform the Effective Schools Consortium and formally coordinate its activities at the state level.

F. Instructional Materials Policies

The policy of the New York State Education Department is to allow local schools to use any textbooks or curriculum materials for any course they offer. Theoretically, high schools in New York could use no textbook at all. One state official described the probable market-based relationship between textbook publishers and the mathematics syllabi. Since the New York I-II-III sequence is relatively new in the United States only a few publishers offer texts consistent with the I-II-III approach or content. However, more publishers may begin producing texts that could be used in I-II-III for two reasons. First, New York is a big market. Second, National Council of Teachers of Mathematics standards and New York's I-II-III objectives were similar. In time, other states, and other districts and schools in other states, would probably adopt versions of the National Council of Teachers of Mathematics standards soon (Respondent A).

G. Education Information System Policies

The New York State Education Department's Information Center on Education (ICE) collects, processes and interprets information whose collection is mandated by law and the Commissioner's regulations on education. It manages most of the information the New York State Education Department gives to and collects from local districts. For example, the Information Center on Education designs computer applications that allow districts to produce reports required by the state. One of its chief functions is to maintain a data base, the Basic Educational Data System (BEDS), on staff, student and community characteristics of 700+ public school districts.

The Information Center on Education is responsible for all data collection efforts within the department. To that end it:

1) designs, conducts and analyzes all surveys for the department and advises intermediate cooperative educational agencies (e. g., Boards of Cooperative Educational Services), districts, and schools on any separate efforts to conduct their own surveys or experiments;
2) coordinates all data collection efforts;
3) disseminates all information from department agencies;

4) provides a program cost simulation model to encourage districts to track program expenditures;
5) analyzes, interprets and disseminates data from all educational sectors of the state (private and public; primary through higher educational institutions) (NYICE#1-ICE, P.1).

Basic Educational Data Systems data allows the processing of student testing results whose data provide indices of syllabus-monitoring and school evaluation (see section on school evaluation policies for more detail). For example, the Information Center on Education collects student competency, Regents exam results and other data from local schools (who may receive data processing help from their Boards of Cooperative Educational Services). The Information Center on Education then reports back to school districts statistics that represent each school's standing relative to the rest of the state. Schools must then produce their own reports for their local publics and the New York State Education Department based on this information. These are called Comprehensive Assessment Reports (CAR reports). These later form the basis for possible state intervention in a schools' management or its instructional delivery or both. The New York State Education Department typically requires that schools whose students test in the lowest ten to fifteen percent of state secondary schools (in reading, writing or mathematics) will produce a Comprehensive School Improvement Plan (CSIP), largely based on effective schools correlates.

The Information Center on Education maintains the Basic Educational Data System and processes norm-referenced test results to conduct school evaluations, monitor teacher certification, and allow the Commissioner to prescribe plans for syllabus-adherence and staff development. The Information Center on Education allows the New York State Education Department to monitor indirectly the extent to which the state syllabi are reflected in instructional outcomes.

III. POLICY ANALYSIS

A. Consistency

1. Curriculum Guidelines and Cross-Policy Consistency

Student course requirements policies are highly consistent with the curriculum guidelines in social studies and mathematics. In order to graduate, all students must pass four years of social studies including an American History course; students must pass either a competency or comprehensive examination in American History. They must also take two years of department-approved mathematics, consisting of either the Mathematics I-II sequence or General Mathematics and either sequence I or some other occupationally-oriented mathematics class, like Computer Mathematics (CR 100.5). To

be department-approved, such courses must follow the outlines of the syllabi, or receive written approval from the department (Respondent C, NYREGIS).

The student subject testing policies are consistent with the state guidelines. Tests are written by subject bureau specialists to conform directly to the syllabi. The close linkage of the two is described in several documents (The Secondary School Curriculum, turnkey training guides, Leaders Guide for Social Studies, subject syllabi) and in interviews with New York Education Department professionals.

Policies on curriculum guidelines are somewhat linked with teacher staff development policies. For example, built into the dissemination of the syllabi is the turnkey training process, whereby all teachers should receive authoritative, New York Education Department-sponsored, training on how to implement the new curriculum.[4] The guidelines are consistent with the reported practice of teacher training colleges to introduce students to the syllabi, and to offer courses in syllabus application for college credit (Respondent A). The linkage between the state syllabi and New York Education Department school evaluation policies will vary with the test scores in a school district's Comprehensive Assessment Report. Low-performing schools may have to adopt state syllabi completely. Other schools need not adopt state syllabi without modification. Nonetheless, to offer a Regents-approved course, schools must show that their curriculum meets with the approval of the New York Education Department. Normally, however, school registration will only cursorily examine some local curriculum documents once every five years. Presumably, low test scores in secondary school subject tests will reveal discrepancies between the syllabi and local practice. The information management system, since it focuses primarily on student test scores, is indirectly linked to the guidelines.

Only textbook and teacher certification policies either ignore or lack much relationship to the state guidelines. According to state personnel, the New York Education Department requires no particular textbooks or criteria for textbook selection in social studies or mathematics.

2. Course Requirements and Cross-Policy Consistency

Course requirements link the syllabi, and the student Regents and competency tests. Since the social studies and mathematics courses schools must offer for either the local or Regents diploma correspond to those designed in the syllabi, course

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[4] State education officials do not really know how many teachers actually receive authoritative instruction since the department only trains the turnkey trainers. To my knowledge, no statistics about how many of the state's social studies and mathematics teachers actually received training, or whether those teachers who received the training understand it, exist.

requirements support the syllabi. While schools could offer a variety of mathematics courses, the sequential requirements and the specification of their nature make unapproved offerings less likely at the ninth and tenth grades.

3. Student Testing and Cross-Policy Consistency

Testing policies and the framework are consistent and designed to be so. Subject tests are based directly on the syllabi, but the syllabi are written so their objectives are testable. The two policies are inextricably intertwined. The Mathematics II syllabus is designed for a Regents level course culminating in the Three-Year Sequence for School Course II Regents examination. As almost every New York Education Department person interviewed reminded me, the extent to which the curriculum is taught is measured by the extent to which it is learned, e.g., by student test scores. Test scores drive school evaluation, and provide the central data from which most statistics are generated about state education.

4. School Evaluation and Cross-Policy Consistency

The extent to which state school evaluation assessed secondary school curriculum alignment with state policies is divided between two closely related functional areas: the normal five year school registration process, and the optional Comprehensive School Improvement Plan process.

The curriculum alignment component was based on two elements. First, all schools were required to lay out their local syllabi, and show evidence that a course offered for Regent's credit (the New York State Education Department does not check on electives or courses not required for a Regents diploma) conformed with either the state syllabi or met with New York State Education Department approval. In the latter case, a letter had to be on file for the relevant course. Discrepancies would be referred to curriculum-writing bureaus or the specific subject bureau or both. Further contact between the New York State Education Department and the district or school or both would usually resolve the problem. Registrations officials do not actually examine local subject syllabi for conformity with state syllabi (Respondent C). Examination of school registration materials reveals that the New York State Education Department tends to rely on school district self-reports on whether their Regents courses use state syllabi.

The second source of evidence about the match between local courses and state syllabi are the teacher interviews. It is common to ask teachers if they follow the state syllabi, and commonly they say that they do. A State official with whom I spoke believed that it was quite rare for a teacher of a course approved for Regent's credit to teach anything other than what state syllabi prescribe. One state official remarked that registration officials did not have the expertise to evaluate curriculum or curriculum alignment. And, as almost all state officials reiterated, the central and strongest tools for curriculum alignment were the state pupil tests.

Another school evaluation program that indirectly dealt (now replaced by the Accountability and Excellence Program) with curriculum alignment was the Comprehensive School Improvement Plan (CSIP) process. CSIP grew directly out of the Regents Action Plan, Regents regulations, and Part 100. These regulations required that low-performing schools (students with test scores on competency tests in the lowest 10-15%) develop a school improvement plan based a state "effective schools correlates" model.

Apparently, under the CSIP system, the extent to which subject matter alignment became a focus of a school improvement plan was related to the test score improvement in that subject. Subject matter specialists rarely involved themselves in local curriculum alignment (Respondent B). However, some did more of this than others, sometimes spending eight to ten full days helping a school develop a properly aligned curriculum (Respondent A). Since school improvement plans are required of schools with low scores in math, reading and writing competency tests, low social studies scores may be of less immediate interest to school evaluators. Subject bureaus rarely receive descriptive reports about social studies from any other bureaus. They can request analyses of social studies test performance, but the process would take time. Furthermore, there is rarely enough time for such activities, given other time-consuming tasks (Respondent B).

Whether the new (July, 1989) Regents Accountability and Excellence Program (AEP) will focus school evaluations on curriculum alignment is unclear. How much registration review in the accountability program will focus on curriculum alignment is unknown. One state official thinks that the program will focus more on curriculum alignment (Respondent D). There is nothing in the accountability program materials or interviews that specifies to what extent or in what manner the program will encourage or require curriculum alignment.

5. Teacher Certification/Development and Cross-Policy Consistency

New York State requirements for teacher certification in social studies and mathematics are loosely related to the state syllabi. Teacher certification requirements are not inconsistent with the state curriculum frameworks; they are simply irrelevant. State mathematics and social studies teacher certification requirements do not specify teacher instruction in the state syllabi. However, there are ways in which state-prepared teachers in mathematics and social studies become familiar with the syllabi. First, the syllabi reflect the standards of relevant national subject area organizations. Second, the state counterparts of these professional organizations support the syllabi in the inservices they conduct. Third, these state subject organizations encourage teacher training institutions in New York state to train teachers in the use of the state syllabi.

State math and social studies guidelines connect more closely to staff development than to teacher certification. Staff development is indirectly related to the curriculum frameworks in several ways. The policies of teacher training institutions and subject

matter organizations are more consistent with the frameworks than with state teacher certification requirements. Staff development is linked to professional subject organizations, state syllabi, school improvement policies, and the policies of teacher training institutions. Particularly in staff development, New York State Education Department subject matter specialists see themselves as service providers, helping teachers to work with the syllabi at the local level.

While teacher certification is weakly linked to math and social studies guidelines, the process of teacher training that leads to certification and re-certification indirectly promote a knowledge of the syllabi among subject teachers. The formal requirements of other policies encouraging or requiring the use of state syllabi (testing, course requirements and frameworks), and the New York State Education Department's free workshops on syllabi create incentives for districts or schools that want to follow syllabi more closely (schools with high percentages of college-bound students). Teacher certification lacks alignment with other state curriculum control policies. However, in numerous indirect ways, staff development bolsters the state curriculum guidelines. Turnkey training sessions insure that new syllabi are taught consistent with the subject bureau's intent. Thus, turnkey training is consistent with state syllabi.

6. Instructional Materials and Cross-Policy Consistency

The policy of the New York State Education Department is to allow local schools to use any textbooks or curriculum materials for any course they offer. Theoretically, high schools in New York could use no textbook at all. As a result, New York's instructional materials policy is not consistent with other curriculum control policies.

7. Information System and Cross-Policy Consistency

The Information Center on Education provides information consistent with the Commissioner's regulations in the following areas: school evaluation, staff development, teacher certification, course requirements, and student testing. It also ensures a high level of consistency in the department's data collection efforts with regard to student test results. However, the state information management system processes little direct information on the extent to which local syllabi and teaching practice reflect the state syllabi. The state relies primarily on student test scores to determine if students are learning, not if teachers are teaching, the curriculum.

Because it controls the manner in which data is collected, analyzed and reported at the state level and either controls or influences that collected at lower levels of the state educational system, the Information Center on Education maintains a system that is consistent with the department and provides information the New York State Education Department needs to determine if schools meet the Commissioner's regulatory requirements.

B. Prescriptiveness

1. Curriculum Guidelines

Generally speaking, New York curriculum guidelines are highly prescriptive. Both the social studies and mathematics guidelines specify the major organizing concepts, the content, appropriate units of study, and offer suggestions on lesson activities. The syllabi are less prescriptive or inconsistently prescriptive in the area of social studies and mathematics skill development. Both the mathematics and social studies syllabi give teachers examples of skill-building activities and rely on teachers to develop their own activities. Social studies skills are developed in a more elaborate system with examples throughout most units of study. Mathematics syllabi describe "problem-solving" and give generic examples of problem-solving activities only at the beginning of the syllabi. At least part of the reason for this level of content prescription is the desire to insure that students are prepared to take either the Regents or competency exams.

(a) the social studies guidelines

The goals of the New York social studies program include the learning of content, the development of skills appropriate to social studies disciplines, and the adoption of particular attitudes. Among these areas, the development of lesson content down to the unit level is most obvious. Every syllabus lists twelve pages of social studies processes and skills at the beginning of the document, though it is sometimes difficult to see which of these skills are reflected in each unit. Few units identify attitudinal objectives (I could find only four attitudinal objectives in the American History syllabus). Each syllabus and the Leaders Guide also contain an introductory section on how to use the content, major ideas, and model activities format.

Syllabi prescribe the content, major ideas and model activities for each unit. Each unit in the syllabus lists general objectives, written as learning objectives. Most objectives are developed as separate sections of the unit, and most objectives deal with the understanding of concepts or specific content. Model activities identify ways in which the skills listed at the beginning of the syllabus can be incorporated into each unit. While these model activities do not specify what skills are being taught, they do seem to reflect the kinds of skills listed in the syllabi and Leaders Guide.

(b) the mathematics guidelines

The New York State college preparatory mathematics syllabi specify the content (concepts, laws, operations), and the process (problem-solving) of the syllabi. Like the social studies syllabi, the I-II-III sequence syllabi prescribe content goals, process goals, and affective goals. The key process referred to is called "problem-solving." The Mathematics I syllabus describes problem-solving as a six-step process, including understanding the problem, organizing information, devising a plan for the solution,

estimating the answer, carrying out the plan, and checking the solution. Problem-solving should be "an integrated part of the learning activities for each unit" (NYMIIM, p. 6). The non-college mathematics is much less prescriptive. The General Mathematics syllabus contains sixty-eight 5-1/2 X 8-1/2-inch pages. The I-II-III sequences contain around eighty plus 8-1/2 X 11 inch pages. Unlike the college preparatory courses, The General Mathematics syllabus does not refer to content, process or affective goals. The General Mathematics syllabus suggests that teachers might cover only some units in order to have students understand those fewer units better. The I-II-III sequence specifies the order of courses, units within courses, and lists problem-solving activities for each unit. Instead of suggesting covering fewer units for greater depth of understanding, the I-II-III sequence recommends that teachers "give priority to a classroom atmosphere where there is ample time for student investigation, discovery, and discussion rather than emphasizing the task of 'covering the material'" (NYSMIM, p.5). While the I-II-III sequences all contain examples of how to present material and activities for problem-solving, the General Mathematics syllabus contains only one problem-solving example, and only some units contain model activities for instruction.

Table 1, below, indicates the overall prescriptiveness of New York's curriculum guidelines according to the eight criteria listed in the introduction to the case studies. New York's guidelines contain broad statements about the nature of the subject matter area and specific content and teaching suggestions down to the unit level. This combined breadth and specificity make New York's curriculum guidelines the most prescriptive of the four states in the study.

Table 1-Prescriptiveness of New York's curriculum guidelines

Dimension of prescriptiveness	Extent of depth and breadth
Overall goals or mission of subject curriculum	high
Course objectives	high
Invariate course sequences	high
Unit objectives	high
Lesson structure & objectives	none
Lesson sequencing	none
Exemplary activities & teaching methods	moderate
Materials specified	none
Overall	high

2. Course Requirements

The prescriptiveness of CR 100.5 on diploma requirements tends to encourage the adoption of the state frameworks. In mathematics, the regulations establish two alternative irreversible mathematics course sequences. The regulations list the titles of approved courses for which there are corresponding syllabi. The following excerpt from 100.5(b)(7)(ii) exemplifies the prescriptiveness (and cross-policy consistency) of student mathematics course requirements.

> The second unit of mathematics shall be taken after a student passes the Regents competency test in mathematics, or a Regents examination in mathematics or business mathematics. Students failing to pass such a test or examination may take the second unit of credit in mathematics provided that the syllabus for such unit of credit is a state or local syllabus approved by the Commissioner. All such syllabi shall meet the criteria for a second unit of credit as set forth in subparagraph (i) of this paragraph. In addition, such unit of credit in mathematics shall be awarded when the student successfully completes the course work for such unit of credit, and passes the Regents competency test in mathematics or a Regents examination in mathematics or business mathematics.

3. Student Testing

The content of tests, the manner of their administration, and their reporting are specified by the New York State Education Department and its subject bureaus. The content of the tests directly reflects the subject curriculum frameworks. For example, both the mathematics and social studies frameworks call for a development of subject specific skills. Both of their tests include questions designed to measure such skills. Social studies American History/Government essay questions typically ask students to synthesize, evaluate, or analyze data or claims surrounding a public policy issue addressed in the framework. Mathematics I-II-III exams include mathematical problems designed to have students exhibit mathematical problem-solving skills (story problems requiring students to show their work).

4. School Evaluation

School registration under the old regulations was not very prescriptive. School improvement plans did require highly prescriptive timelines, lists of objectives, lists of activities to meet the objectives, and summative reports, but this high level of prescription did not have to address changes in curriculum content or process. Clear is the fact that the new school monitoring and evaluation systems, (July, 1989) Regents Accountability and Excellence Program (AEP), will prescribe the reporting of more information.

5. Teacher Certification

New York State requirements for teacher certification in social studies and mathematics prescribe no teacher knowledge of the state syllabi. State mathematics and social studies teacher certification requirements do not specify teacher instruction in the state syllabi. Teacher preparation in subjects is required by law. The process of teacher training that leads to certification and re-certification indirectly promote a knowledge of the syllabi among subject teachers. Workshops, both voluntary and mandatory, are likely to strongly prescribe the state syllabi. According to subject bureau personnel, such workshops tend to be well-received and effective disseminators of information about the syllabi and how to implement them. Inservice is not required by law. However, initial turnkey training is highly prescriptive due to the hierarchical control training method.

The social studies leaders guide (NYLGSS) provides a highly prescriptive overview of the social studies K- 12 program, a summary of the content, required state tests in social studies, suggestions for education of special student populations (accelerated, remedial and "special education"), developing, implementing and evaluating program change, Commissioner's social studies regulations, course outlines (even a sample lesson plan), a bibliography, maps of contact people, and "frequently asked questions." In the social studies leader's guide, the same emphasis on skills and content organized around key concepts runs through the training and curriculum guides. Though the training manual suggests that the sections of the guide can be presented in any logical order, the manual flows from the central principles to the details, possibly making such changes more difficult. This packaged guide provides materials from which overhead transparencies or photocopies can be generated.

6. Instructional Materials

The policy of the New York State Education Department is to allow local schools to use any textbooks or curriculum materials for any course they offer. Theoretically, high schools in New York could use no textbook at all. Since the New York I-II-III sequence is relatively new in the United States, only a few publishers offer texts consistent with the I-II-III approach or content. However, the National Council of Teachers of Mathematics standards and New York's I-II-III objectives were similar.

7. Information System

The New York State information management system requires a wide range of specific information from each local school district. However, the reporting system contains little information on the extent of teacher use of syllabi. For example, the Comprehensive Assessment Report includes school results on all state tests for the previous three years, student graduation data (diplomas, student transfers into alternative schools, diploma candidates and so on); socio-economic status and other social background information on students, the average class size; the pupil/staff ratios, and

dropout and attendance rates; and any additional information required by the Commissioner (e.g., desegregation data). While the information management system requires much specific information from schools and districts, for most schools, most of the data is very loosely connected with the state's curriculum guidelines.

C. Authority

1. Curriculum Guidelines

(a) social studies guidelines

The new social studies syllabi draw mainly on legal and expert authority. Since they represent relatively recent ideas on the structure of social studies, the guidelines are not intended to derive authority from tradition or current practices of social studies teachers. Legal authority comes from the Regents' Plan of Action, and the subsequent changes in the Commissioner's regulations, Part 100. Expert authority derives from syllabi based on the National Council of Social Studies guidelines, and the involvement of state and nationally-known leaders in social studies curriculum development.

The goals of the new social studies guidelines are based directly on the goals of the State Board of Regents for Elementary and Secondary Education, stated in their Action Plan of 1985, and reflected in the Commissioner's regulations, Part 100. The social studies workshop leaders training guide describes this consistency of the new syllabi with the Regents' goals. Indeed, this document lists the particular Regents goals that are "keyed to" each New York social studies goal (NYLGSS, pp. 9-11). Also, each social studies syllabus lists these goals in its introduction.

> The New York State Regents goals for elementary and secondary education form the basis for the development of the State syllabi in social studies and the various State evaluations, examinations and tests based upon these syllabi (NYGSSS, p. 8).

These goals include the understanding of major concepts, the learning of skills and the development of desired attitudes. From these goals, the Bureau develops further sub-goals relevant to secondary social studies instruction. Regents' goals specific to social studies instruction include the acquiring of civic literacy, the learning of inquiry skills appropriate to social studies disciplines, learning about the political, social and economic institutions of this and other countries, and developing mutual understanding among people from different social backgrounds.

The goals for social studies in grades 7-12 follow from these more general goals. They are listed directly after the Regents' goals in every social studies syllabus for grades 7-12. Each of the twenty items are couched in behavioral objectives language, possibly to encourage their application in local subject syllabi.

> 3. participate as informed citizens in the political and economic systems of the United States.
> 9. empathize with the values that guide the behavior of people from different cultures.
> 11. compare the rights and responsibilities of citizens of the United States with the rights and responsibilities of citizens of other societies.
> 17. identify important social studies ideas and methodologies and apply them to new information and experiences (NYAHSS, pp. 6-7).

From the general social studies goals, each secondary school social studies syllabus develops the teaching of the skills and content in a format common to all the social studies syllabi: content outline, major ideas, and model activities. Each syllabus breaks down larger social studies goals into subject sub-goals. For instance, at least some of the Global studies syllabus content goals appear to flow from items #9 and #11 listed above:

> ....citizenship education must now transcend its customary limitations to the institutions and societal patterns that characterize Western civilization. Such education requires:
> 1) Perspective Consciousness - recognition that world outlooks are not universally shared.
> 2) Cross-cultural Awareness - knowledge of the diversity of ideas, values and traditions that shape the lives and decisions of other people (NYGSSS, p. 21).

The Regents formally approved the revised guidelines prior to its dissemination. Because the guidelines for social studies flow out of the Regents goals for secondary education and meets with the Regents' approval, it has legal and formal authority.

The expert authority of the syllabi results from the involvement and support of social studies experts on the state and national level. Four state social studies subject organizations and two national geographic associations are listed as having "provided invaluable assistance at several stages of the revision process" (NYSGSSS, p. 2). The "discussion paper" committee included four New York State college professors, one subject organization representative, six social studies supervisors or chairpersons from state schools, and one local school district superintendent. A symposium on secondary social studies sought the advice of representatives of diverse groups, including subject specialists at the college level. At least two nationally-recognized leaders in social studies education participated in the development of the social studies syllabi (Respondent B).

The state social studies guidelines do not claim to represent current social studies teaching practice in New York high schools. However, the bureau consciously sought advice and consent from a wide range of professionals at all initial stages in the development of the new guidelines. The fact that many locally prominent high school social studies teachers, supervisors, and public officials were involved in the development,

criticism or field testing of the syllabi speaks to potential normative (and possibly expert) authority. Individuals from a wide variety of school districts throughout the state made up the guidelines committee. Also, the bureau field-tested the curriculum at 113 (out of about 725) mostly public school districts throughout the state. According to the bureau, the early and post-field-test revisions of the syllabi modified the syllabi:

> The proposed framework was subjected to review by social studies teachers and supervisors, by academics representing the social science disciplines, and interested public groups. As a result of this review, the proposed framework was used as the basis for writing the grade level syllabi for the new curriculum (NYAHSS, p. iii)

The legal, expert, and normative authority all undergird the New York State social studies curriculum guidelines.

(b) mathematics guidelines

As in social studies, the most important elements of authority of the mathematics guidelines are legal and expert. Since the new syllabi make major changes in the structure of traditional high school mathematics courses, normative and traditional authority are ambiguous. Because of the major changes, the New York Education Department has consulted with an ever-widening network of interested groups and experts to produce a professionally-responsible current syllabus that addresses the practical needs of state teachers (Respondent A).

The Division of Curriculum Development and the Bureau of Mathematics are legally responsible to revise out of date curriculum and superintend the process whereby new syllabi are developed, disseminated and processed. Like social studies materials, mathematics syllabi refer to the Regents Action Plan and the Regents' Goals for Elementary and Secondary Schools, and state that the new syllabi generally reflect the Regents' goals. Unlike social studies materials, mathematics materials do not "key" Regents goals to general objectives of the 7-12 program. Since the General Mathematics syllabus has not been revised since 1978, it does not refer to the Regents' goals or any other authority justifying the teaching of General Mathematics. The central justification for the General Mathematics syllabus presented in the syllabus that it meet the "needs, interests, and abilities" of students in a program "other than algebra" (NYGMM, p.1). Language in the document suggests that General Mathematics should emphasize arithmetic, while providing an interesting and practical course for students judged incapable of grasping algebraic logic.

From the bureau's point of view, the main basis of authority for the new syllabi (I-II-III) is the expertise underlying the guidelines. To justify its emphasis on mathematical problem-solving, the New York Education Department cites a recent National Council of Teachers of Mathematics recommendation for such an emphasis and

a College Board recommendation. To justify its addition of probability and statistics to the syllabi, the Bureau cites a recommendation from the College Board. In addition, the bureau has elicited criticism and advice from an advisory committee composed of college and school math professionals throughout the state. These individuals are listed in the foreword of each syllabus. No experts or advisory committees are listed in the General Mathematics syllabus.

The normative authority of the syllabi result from two processes built into the I-II-III syllabus revision process. First, following revisions in the syllabus based on the advisory committee's recommendations, each course was field-tested in eleven state schools. After field-testing the syllabus was again revised. The foreword even lists the major changes due to the responses from the field-testing process. A second element aimed at establishing the normative authority was the widening of representation on the revision committee. Normally smaller, the committee was expanded to twenty-five persons in order to accommodate more of those who had problems with the field versions of the curriculum (mainly secondary and college teachers). This strategy helped in promoting teacher acceptance of the I-II-III sequence (Respondent A).

A final element bolstering the normative and traditional authority of the sequence is the fact that most of the I-II-III syllabi contains the traditional content of a high school college preparatory mathematics program: geometry and algebra (and trigonometry). According to a state official, the only fundamental change in the content is the addition of probability and statistics concepts and notation. The only fundamental change in teaching technique is teaching trigonometry by the circle rather than right angle method (Respondent A). The General Mathematics syllabus does not list any teachers (college or otherwise) involved in the syllabus development, nor any field-testing involving the implementation of the syllabus. However, the fact that the General Mathematics syllabus has remained the same for eleven years may testify to its greater traditional and normative authority (compared with I-II-III).

2. Course Requirements

The Commissioner's regulations, particularly those found in 100.5, authorize the establishment of the above-mentioned graduation course requirements. This authority is based on the formal power of the Regents to specify graduation requirements for secondary students. The specific social studies and mathematics course requirements arise directly out of the 1984 Regents Action Plan.

3. Student Testing

The Regents and competency tests appeal to legal, traditional, normative and expert authority. Their legal authority derives primarily from Section 100.5 of the Commissioner's Regulations. This section links testing, course and graduation requirements. This authority is further supported by Section 3.34 of the Regents Rules

that requires the use of these or equivalent examinations in high schools as a condition of state aid. In addition, Section 100.2(e) requires that public school districts that wish to offer a Regents diploma must offer Regents'-approved courses of study. School registration officials look for this fit when they visit schools every five years (Respondent C).

Regents tests also possess traditional authority. The examinations have been administered for most decades of the twentieth century. Documents describing the Regents exams remind the reader of the long history of Regents exams. The authority of Regents exams is virtually unquestioned, as interviews from the New York State Education Department officials indicate. Since the competency tests are relatively new (in the 1980s), they lack the substantial traditional authority to which Regents examinations appeal.

In addition to having substantial legal and traditional authority, the state Education Department testing policies can rely on their expert authority. First, the tests are generally written by subject bureau specialists who have an intimate knowledge of the frameworks. Second, the manner in which the tests are generated, given and evaluated involves statistical and technical expertise. For example, the New York state Education Department produces numerous exams for different student populations (braille, large print, foreign language versions). Also, while the New York State Education Department relies on local subject teachers to grade state exams, each subject bureau reviews a random selection of tests to insure reasonably reliable scoring. A state Education Department professional stated that the "summer reviews" showed high consistency between local teacher and departmental rankings (Respondent B).

The normative authority of the tests is considerable. Evidence of this is the extent to which testing procedures and test content are embedded in school practices, and in most other curriculum control policies on the state, regional and local levels. For example, schools may claim three "Regents examination days" in January and five days in June. Such days may count toward the 180 required student contact days, but attendance records for students 9-12 are not required. The extent of this embedding is also reflected in the considerable and increasing record-keeping, reporting and evaluation functions arising out of the administration of the tests and student scores. School districts must produce six separate reports to the New York State Education Department related to the tests alone (NYRECT, pp. 20-22). The New York State Education Department does not simply give these tests and report the results. It involves districts in the process. Other sections of this report will show to what extent student test scores become the basis for the evaluation of schools and staff development.

4. School Evaluation

Policies for school evaluation arise out of New York State's traditional and formal legal authority to "register" high schools throughout the state once every five years; more

recent (NYPART100) formal authority requires that schools with low test scores develop school improvement plans and be visited by compliance teams annually. The lack of curriculum expertise among the registration officials, and the lack of formal authority to require local districts to follow curriculum all contributed to the minimal strength of school registration as a curriculum alignment tool.

New York State Education Department official have argued that these policies were authoritative due to research, a form of expertise. Low- performing schools would then be linked to the state's Effective Schools Consortium Executive Committee, who would assign experts to work with the school. The support of the consortium added some expert and normative authority to these plans, since the group contained researchers and practitioners outside of the New York State Education Department. Their authority was based largely on their knowledge of school effectiveness processes.

5. Teacher Certification

New York State requirements for teacher certification in social studies and mathematics do not supply authority for curriculum frameworks. However, in staff development, New York State Education Department subject matter specialists see themselves as service providers, helping teachers to work with the syllabi at the local level.

Teacher preparation in subjects is required by law. Workshops vary in their level and type of authority. According to subject bureau personnel, such workshops tend to be well-received and effective disseminators of information about the syllabi and how to implement them. Inservice is not required by law. Training is authoritative since it is based on the judgments of state, national and sometimes local curriculum experts. This expert authority is buttressed by formal state testing authority, and normative authority due to field testing and revisions.

6. Instructional Materials

The New York I-II-III sequence is relatively new in the United States, only a few publishers offer texts consistent with the I-II-III approach or content. However, New York is a big market and the National Council of Teachers of Mathematics standards and New York's I-II-III objectives were similar. The policy of the New York State Education Department is to allow local schools to use any textbooks or curriculum materials for any course they offer. In time, other states, and other districts and schools in other states would probably adopt versions of the National Council of Teachers of Mathematics standards (Respondent A).

7. Information System

Since 1967, the New York State Education Department has maintained an Information Center on Education (ICE). However, the authority of this Center and the scope of its information management activities have been boosted by the Regents' Action Plan of 1984 and the two years immediately preceding its publication. The Regents' Action Plan calls for the collection of information designed to monitor the effectiveness of schools and subject instruction. The Regents' Action Plan initiates the Comprehensive Assessment Report program, and the reporting requirements that result from its implementation. The primary source of authority is formal legal authority flowing from the New York Board of Regents, and the Commissioner of Education. The Information Center on Education gains authority also due to its expertise in data collection, analysis, dissemination, and mastery of high technology.

The ICE has formal authority only to collect data from districts. After delivering the student test scores to districts, this agency collects and organizes data it receives mainly from required school district reports, called Comprehensive Assessment Reports. Comprehensive Assessment Reports contain basic information about schools in the district, including attendance, dropout figures and similar statistics; the state Commissioner may also require additional information, e.g., desegregation data. Districts are required by law to submit these reports to their local school boards and the state ICE annually. The ICE provides school performance reports for the Division of School Registration and Supervision, New York State Education Department. This latter agency apparently monitors schools for compliance with New York education laws, rules and regulations. Furthermore, it produces similar reports for subject matter specialists in the New York State Education Department bureaucracy. As the Information Center notes: "These reports are the major source of information the bureaus have about the schools and their programs" (NYICE#1-ICE). The ICE collects and processes information that other agencies and political actors can use to influence what curriculum is controlled and how it is controlled. It produces a variety of reports, for a variety of policy publics it identifies as "the polity, the professional and, most particularly, the parent" (NYICE2-AEP, P.18). The ICE identifies agencies outside the Department they can potentially serve: the National Education Association, New York State United Teachers, the NCESS, the Bureau of the Census. The ICE is authorized by law to collect data from school districts, and views its mission as a service agency for other agencies and political publics. The ICE seems to mainly collect information from local districts for use by others outside the district.

The ICE collects a wide range of information on schools, but very little information on how state curriculum guidelines work in each school district/school. With the exception of test scores, most of the BEDS information is indirectly related to curriculum control (courses offered and taught, length of class and so on). The descriptive reports to state subject specialists referred to in Information Center on Education documents appear to be statistical summaries of norm-referenced student test

scores in subjects. Reports that describe teaching practices, teacher application of state syllabi to their curriculum, or summaries of local syllabi appear to be unavailable to the Information Center on Education. No districts are yet required by regulations to submit such information. While school improvement plans may require some reporting of this nature, I found no evidence in any documents or interviews that such information is collected by the ICE or any other part of the New York State Education Department.[5]

Whether the ICE can appeal to traditional authority is difficult to determine. Its twenty-two year history (born in 1967) does not seem to indicate much chance of its effectively appealing to traditional authority. However, from the 19th century on, New York State has followed a general policy of centralized information collection, analysis and management. The ICE seems to claim that its offers expert, high-technology information management.

D. Power

1. Curriculum Guidelines

As noted above, the guidelines are only required in schools "in need of assistance." Schools testing in the lower ten to fifteen percent of all New York schools may be required to adopt state syllabi in the subject where students test below minimal expectations; whether any secondary school has been required to is unclear. A New York Education Department official noted that he/she had worked in schools "in need of improvement" to help teachers implement mathematics syllabi. Whether that assistance was required by the New York Education Department or the Commissioner is unknown.

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[5] The sophisticated information management system at the State Education Department is not perfect. First, ICE information does not allow subject bureaus easy monitoring of the extent to which secondary teachers follow the state syllabi. According to one state interviewee, subject bureaus do not regularly receive program information except for special programs (e. g., social studies 6th and 8th grade programs). While subject bureaus can request such information, requests take time. Furthermore, subject bureaus need time to read and interpret program results. At the present time, social studies lacks two positions for which hiring has been frozen for the last two years. Subject bureaus are only likely to receive reports on low-performing schools. There may be insufficient resources to assess all school subject programs in the state (Respondent B). Secondly, information may not get to those who need it. One state Education Department official noted that a complete, updated listing of all local school officials is sent regularly to officials who monitor only state agencies, while many others in the state Education Department who need this listing do not receive it.

However, for the majority of public secondary schools in the state, the alignment power of the syllabi lies in the state student testing mechanism. Testing policies, described elsewhere in more detail, link syllabi directly to both comprehensive and competency tests. Test results can become effective sanctions supporting syllabus-adherence in at least two ways. First, test results can affect the kind of diploma students get. For instance, if students cannot pass comprehensive tests, they cannot receive a Regents' diploma. As a result their attempts to get into a college will be reduced considerably. Second, students cannot get a diploma at all if they fail the competency tests. Teachers and schools with low comprehensive or competency test scores may experience pressure from the state, local school administrators, or communities to conform with state syllabi. The New York Education Department provides an annual list of low-performing schools for the major state newspapers who generally publish the results. So, in addition to the local or state sanctions, the New York Education Department attempts to mobilize general public opinion to make schools teach what the state syllabi recommend.

A possible reward to schools that wish to follow the syllabi more closely is the technical assistance that the New York Education Department can generate to help schools "build local programs upon these guidelines established at the state level" (NYCD, p.27). At the present time in social studies, this assistance may be difficult due to staff and budget limitations. However, in principle, the New York Education Department can offer no-cost curriculum alignment assistance.

The power of guidelines lies largely beyond the syllabi and their dissemination. Power comes through the sanctions that can result from low test scores. Since competency and comprehensive tests are available and required for most subjects in mathematics and social studies, they become the chief means by which syllabus-adherence is maintained. Almost every New York Education Department person interviewed, no matter what bureau they represented, believed that the testing/syllabus link between Regents courses and Regents competency exams constituted the most significant force for alignment of the curriculum with local practice.

However, the strongest syllabus linkages are between the syllabi for Regents courses and Regents comprehensive examinations. These affect about 50% of the students -- those bound for college. About 70% of those taking Regents examinations pass. Unfortunately, the state's 1987-88 annual report of "The State of Learning" is silent about student competency test results. A 1986-87 report indicated that only about 69% of all those taking the state mathematics competency test passed. This raises a question. If students are taught by a state syllabus and take tests matched to that syllabus, why do about thirty percent fail?[6]

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[6] A weakness in the testing/syllabus linkage may be weakened by retention, course-participation and student pass rates reported in 1987-88 state (public high school) statistics:

2. Course Requirements

The power of the course requirements are based on the ability to sanction students by not allowing them to receive a high school diploma, and by rewarding those who pass or excel in Regents examinations. Schools' continued registration depends on their offering courses consistent with diploma requirements. As noted elsewhere, schools who offer Regents examinations must offer courses based on state syllabi. Failure to do so can result in deferred revoked registration (NYREGIS).

3. Student Testing

The power of Regents exams and competency tests is evident in school evaluation and student diploma requirements. Schools normally undergo a school registration once every five years. However, low scores can bring on increasingly intrusive state scrutiny and increasingly more restrictive state requirements. This power is apparently increasing with the Accountability and Excellence Program, described in greater detail in another section of this report. In addition, the new program will require even adequately scoring schools to find ways to improve their performance and show the New York State Education Department that they are following their plan. Under the Accountability and Excellence Program, school registration can be revoked and this can result in the complete loss of the school's autonomy. These kinds of sanctions apply just to schools. Should students fail the competency tests in mathematics and social studies, they cannot

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- the retention rate for public and private schools between ninth and twelfth grades in 1984-87 was about 71% (about 50% in NYC) with much lower rates for blacks and Hispanic children (47.4 and 41.2 , respectively). This percentage has steadily declined by almost 10 points since 1967.
- only about 50% (42% of minorities) of high school students take all three math sequences and pre-calculus.
- statewide, only about 49% (a slight increase since 1982-83) of all New York public high school graduates receive Regents diplomas.
- in New York City, only 37%, and in other large cities only 32.6% of students received Regents diplomas (same since 1983).
- of those students who took U.S. history Regents' examinations statewide in June 1988, only 72.6% passed them; New York City and other large cities evidenced much lower pass rates (52.4% and 59.2%, respectively). The pass rates in Math I tests are similar.
- the percentage of those passing all Regents examinations except English has declined statewide since 1978.

In short, the testing linkage applies mainly to the college-bound who take Regents courses. Even within this group, there is no information available at the state level that could lead to accurate diagnosis of the close to 30% failure rate.

receive a local diploma. While districts are required to provide remediation for failing pupils, the extent of help could conceivably vary considerably. Should students fail or do poorly on Regents exams, their chances to attend college (at least in New York State) will decrease. These New York tests carry clout that can directly modify the futures of students and their high schools.[7]

4. School Evaluation

The New York State Education Department has the power to make only low-performing districts follow state syllabi. But even though CSIPs could require strict adherence to the syllabi, they rarely did so, and then apparently only in reading, writing and mathematics. According to three sources within the department, the main focus of the plan was not curriculum (Respondent D, Respondent F, Respondent B, NYCSIP), but establishing a collaborative decision-making apparatus including staff, parents and students. Typically, schools would develop new student rights and rules, new disciplinary policies. More rarely, they might work on some limited aspect of the school's curriculum, e. g., finding a better textbook (Respondent D, Respondent B). Should schools not exhibit improvement within a time period established by the New York State Education Department (usually one year), the Commissioner has the legal power to require the use

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[7] This perception is based mainly on the judgments by state Education Department officials that acceptance into New York colleges is based on students possession of Regents diplomas; officials rarely mention the importance of competency tests except that passing them allows students to receive a high school diploma. There is some logic and statistical evidence that may support the claim that test-passing affects student futures. Of those students surviving school through the senior year, only less than one percent fail to pass competency tests or pass courses required for graduation. Practically all state seniors will acquire a high school diploma, and slightly less than fifty percent of them will receive Regents diplomas (about 48%). In their annual report, the state Education Department does not provide data on the post-secondary educational outcomes for students who pass Regents exams or receive Regents diplomas. Nor do they provide data on the futures of dropouts versus high school graduates. The only charts provided in the annual report for New York high school graduates post-secondary activities are students' expectations to attend some kind of post-secondary school. A Regents diploma cannot be granted without students passing the required mathematics and social studies comprehensive tests. The supposed importance of a Regents diploma is based on the assumption that the majority of students entering New York colleges attend school in New York State. Assuming (no statistics available) that the majority of students applying have Regents diplomas, not having one may be a serious deficit. The supposed importance of the local diploma (that requires knowledge of basic mathematics and United States history) for employment is based on the same logic. Furthermore, national statistics indicate that drop-outs earn one-third lower wages, and are employed in lower-skilled jobs with poorer working conditions (NYAR, p.82).

of state syllabi, the allocation of additional resources and specify the reporting of particular information and the correction of specific problems.

The Accountability and Excellence Program allows the New York State Education Department to exercise more power over more examination of the Educational Accountability Program documents. Revisions of Part 100 reveal that the New York State Education Department is now more concerned with making low-performing schools improve by increasing sanctions for low-performing schools: revoking their registration (NYAEP) and allowing parents to send their children to schools of their own choice. Registration has also been extended to junior, middle, and elementary schools and allows non-public school registration. Also, all districts must produce a long term plan of excellence. Finally, more things than a lapse of five years of low test performance can trigger a registration review, including the failure of a district to develop a long term excellence plan, or failure to present the annual school progress report to the public. The Accountability and Excellence Program has new power absent in the previous two evaluation programs.

5. Teacher Certification

New York State requirements for teacher certification in social studies and mathematics do not serve to enhance the power of curriculum guidelines. State mathematics and social studies teacher certification requirements do not specify teacher instruction in the state syllabi. Teacher preparation in subjects is required by law. The process of teacher training that leads to certification and re-certification indirectly promote a knowledge of the syllabi among subject teachers. Workshops vary in their level and type of power. Inservice is not required by law. However, the formal requirements of other policies encourage or require the use of state syllabi.

6. Instructional Materials

Theoretically, high schools in New York could use no textbook at all. The policy of the New York State Education Department is to allow local schools to use any textbooks or curriculum materials for any course they offer. Thus, New York's instructional materials policy is not powerful.

7. Information System

The power of the educational management information system derives from the Commissioner's legal regulatory authority. Sanctions for non-reporting appear to be increasing. The Information Center on Education itself can ultimately rely on the power of the Commissioner and the Board of Regents to require districts to report desired information. Previously, school districts were required to report information about their facilities, programs, teachers and students through the Comprehensive Assessment Report, yet there were no formal penalties or rewards that the Information Center on

Education could issue for not doing so. The new Educational Accountability Program adds power to the reporting system. Under the Educational Accountability Program, the New York State Education Department will automatically begin a registration review of all schools that fail to report Comprehensive Assessment Report data when required. As I note elsewhere, such reviews can allow the state to require that schools teach the state syllabi. Yet, as one education official told me, it is rare to find schools that do not follow the syllabi recommended by the state (Respondent C).

IV. CONCLUSIONS

The curriculum guidelines for both social studies and mathematics encourage a very strong system of curriculum alignment. They are authoritative, and rely on more than just formal authority. The guidelines are generally very prescriptive, down to the level of unit objectives and sample activities. The power of the guidelines comes mainly from their linkages to the testing and school evaluation policies. Both of the guidelines are consistent with all other curriculum control policies except teacher certification and textbook policies.

The legally authoritative, powerful, highly prescriptive and cross-policy consistent student course requirements support the state mathematics and social studies frameworks. New York students, in order to receive a high school diploma, must complete courses that are said to closely resemble those approved by the New York State Education Department.

In general, mathematics and social studies student tests are linked to the frameworks, especially the Regents tests. The two-tier mathematics tests reflect the two-tier goals of the mathematics program. For the college-bound, probability, statistics, and mathematical problem-solving were added to a spiraled algebra/geometry-based curriculum. The tests for sequence I-II-III generally reflect that. For others, the curriculum remains largely unchanged; that is reflected in the tests. Both competency and Regents social studies tests reflect the concern that essential concepts, content, and attitudes are taught and tested at the Regents and competency levels. Testing policies connect several curriculum control policies in a web of consistent, authoritative, power and highly prescriptive policies.

School registration under the old regulations was not very prescriptive, authoritative or consistent with respect to curriculum practices. The short duration of the registration review process, the lack of curriculum expertise among the registration officials, and the lack of formal authority to require local districts to follow curriculum all contributed to the minimal strength of school registration as a curriculum alignment tool. Even under the new system of school evaluation, the extent to which school registration reviews and excellence plans focus on curriculum alignment is limited. If student scores in mathematics, reading or writing competency tests fall into the lowest 10-15%, then a

school evaluation process will probably call forth resources to raise scores by aligning the state syllabi and the local curriculum. However, the school evaluation system has a broader mission than just evaluation of curriculum: making schools effective. Implicit in the underlying assumptions of the New York State Education Department school evaluators, lower test scores are largely caused by ineffective school practices.[8] The Accountability Program, a major revision in the school evaluation system, is more prescriptive, more powerful, and more internally consistent. However, the school evaluation system is not necessarily a tool for the alignment of state syllabi and local mathematics or social studies content or processes. Whether the new (July, 1989) Regents' Accountability and Excellence Program (AEP) will focus school evaluations on curriculum alignment is unclear. Clearer is the fact that the new school monitoring and evaluation systems will prescribe the reporting of more information, will be able to sanction non-improving schools, and will tighten the links between school improvement and school registration functions.

While teacher certification is weakly linked to math and social studies frameworks, the process of teacher training that leads to certification and re-certification indirectly promote a knowledge of the syllabi among subject teachers. Teacher preparation in subjects is required by law. Workshops, both voluntary and mandatory, are likely to strongly prescribe the state syllabi. Workshops vary in their level and type of authority and power. According to subject bureau personnel, such workshops tend to be well-received and effective disseminators of information about the syllabi and how to implement them. Inservice is not required by law and the New York State Education Department does not prescribe the nature of inservice. However, the formal requirements of other policies encouraging or requiring the use of state syllabi (testing,

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[8] There is evidently some difference of opinion within the state Education Department about what will best improve low student scores, and whether the "effective schools correlates" process is sufficient to improve schools. Within the Comprehensive Instructional Management System (CIMS) program, mainly elementary (at this point) schools volunteer to receive extra help in aligning one or more aspects of their curriculum directly with the state syllabi. Test scores from schools in the program show significant improvement. The central assumption of this program is the "the curriculum drives the program" (NYCIMS, p. 1). According to a state official, CIMS incorporates effective schools principles into its curriculum-driven design of instructional improvement. CIMS has rejected the idea that schools can individually improve themselves without substantial outside curriculum expertise; and that establishing an effective schools process was much less powerful than CIMS in raising student scores. The same official, argued that the process orientation of CSIPs was insufficient to address deficiencies in subject learning (Respondent D). Those connected with school registration and school improvement seem to believe that what improves test scores is making the school effective; more disciplined, more collaborative, and administrated more effectively; and seem to believe that individual schools can make themselves more effective (Respondent D).

course requirements and frameworks), and the New York State Education Department's free workshops on syllabi create incentives for districts or schools that want to follow syllabi more closely (schools with high percentages of college-bound students). Teacher certification lacks alignment with other state curriculum control policies. However, in numerous indirect ways, staff development bolsters the state curriculum frameworks. New York State requirements for teacher certification in social studies and mathematics are loosely related to the state syllabi. They supply neither authority nor enhance the power of curriculum frameworks; they prescribe no teacher knowledge of the state syllabi. State mathematics and social studies teacher certification requirements do not specify teacher instruction in the state syllabi.

New York State's instructional materials policy is low in an analytical criteria used in this study. The instructional materials policy of the New York State Education Department is to allow local schools to use any textbooks or curriculum materials for any course they offer. Theoretically, high schools in New York could use no textbook at all. Since the New York I-II-III sequence is relatively new in the United States, only a few publishers offer texts consistent with the I-II-III approach or content. However, more publishers may begin producing texts that could be used in I-II-III because New York is a big market, and because the National Council of Teachers of Mathematics standards and New York's I-II-III objectives were similar. In time, other states, and other districts and schools in other states would probably adopt versions of the National Council of Teachers of Mathematics standards.

The New York State educational information system collects and reports a considerable amount of information. Most of this information is indirectly connected with curriculum guidelines, and directly connected with student testing and school evaluation policies. The data most directly related to the guidelines is that connected with student tests. Student testing data, and the manner in which statistics from that data are reported give the New York State Education Department its main source of information on the extent to which schools follow the curriculum.

Table 2 summarizes the findings in the New York case study. New York's strongest policy areas are curriculum guidelines, course requirements, and student tests. The weakest areas are instructional materials and teacher certification.

Table 2-Overall policy strength of New York curriculum control policies

Policy:	Consistent	Prescriptive	Authority	Power
Curriculum Guidelines	high	high	tradition (e) expertise (e) norms (i) law (e)	high (s)
Course Requirements	high	high	tradition (e) norms (i) law (e)	high (s)
Student Tests	high	high	tradition (e) expertise (e) norms (i) law (e)	high (s)
School Evaluation	low	low	tradition (e) expertise (e) law (e)	high (s)
Teacher Certification/Staff Development	none	low	law (e)*	low (s)
Instructional Materials	none	none	norms (i)	none
Informational System	low	low	expertise (e) law (e)	none
Overall	low	high	high	high

e=authority explicitly stated in documents or interviews
i=authority implicit in policies or implementation of policies
*=authority given mainly to higher education institutions
s=sanctioning power

LIST OF ABBREVIATIONS-NEW YORK CASE STUDY

NYCD	Curriculum Development Handbook-NY
NYSD	Syllabi Dissemination Goals-NY
NYRECT	Regents' Examinations and Competency Tests-NY
NYAM	Administrators' Curriculum Manual-NY
NYAP	Annual Report of NY Education-NY
NYPART100 CR100.X	Part 100 of the Commissioner's Regulations
NYICE#1	Information Center on Education-NY
NYICE#2	ICE-Assessment of Educational Progress
NYS/CDN	Effective Schools Network Document-NY
NYSGSSS	Global Studies Syllabus-NY
NYSMIM	Math I Syllabus-NY
NYAHSS	American History Syllabus-NY
NYLGSS	Leader's Guide for Trainers, Social Studies-NY
NYSGMM	General Mathematics Syllabus-NY
NYREGIS	School Registration Guide-NY
NYCSIP	Comprehensive School Improvement Document-NY
NYAEP	Accountability and Excellence Program Description-NY

THE STRENGTH OF TEXAS CURRICULUM CONTROLS

THE STRENGTH OF TEXAS CURRICULUM CONTROLS

I. INTRODUCTION

This study of Texas curriculum control systems investigated six policy areas: 1) curriculum guidelines, 2) graduation course requirements, 3) student testing, 4) school evaluation, 5) teacher certification and development, and 6) instructional materials selection. These policy areas were evaluated in terms of four criteria: consistency, prescriptiveness, authority, and power. The policy areas have a moderate degree of consistency with each other. Generally, the policy areas show moderate levels of prescriptiveness, authority and power. According to the characteristics used in this study, Texas has a strong curriculum control system.

Prior to 1981, Texas legislated aspects of curriculum, but did not prescribe a curriculum system (Respondent 1). In 1981, the state legislature passed a curriculum reform bill that, among other things, designated twelve subject areas that all schools must teach. The bill, House Bill 246, also required that the state Board of Education designate the "essential elements" of each subject area. In 1982, the Texas Education Agency (TEA), the state education department, developed the essential elements and codified them in Chapter 75 of the Texas Administrative Code. The essential elements are general objectives for subject area courses. Each objective contains sub-elements. These elements and sub-elements form the core of what the state calls frameworks for every subject area. The subject frameworks also contain general goals, objectives, and advice on how to implement curriculum guidelines.

Since the creation of Chapter 75, Texas has begun to link its student testing, school monitoring, textbook, and teacher testing policies directly to the essential elements. Authority for the curriculum in social studies and mathematics derives partly from state legislation and administrative code. Part of the authority of the curriculum lies in its traditional nature: administrative law now codifies the traditional content of mathematics and social studies. Texas has recently (1989) changed its mathematics guidelines textbook adoption standards to conform to a National Council of Teachers of Mathematics-like (NCTM) curriculum; beginning in the 1990-91 school year students will be tested on the new mathematics curriculum. Texas has appealed to expert authority by soliciting the advice of professors, administrators and teachers, and in referencing their curriculum concepts to those of national subject organizations. The authority of the curriculum is backed by its connection with other more regulatory functions of the Texas Education Agency, mainly school monitoring, student testing, and textbook adoption.

Texas first began requiring that students meet uniform graduation requirements in 1981. Requirements arose from the legislature's HB246. That bill requires that Texas schools teach a "balanced curriculum." Accordingly, Texas specified 21 credits, including four years of English, three years of mathematics, two years of science, three years of social studies, one and one-half years of physical education, one-half year of health

education, and seven years of electives. The balanced curriculum includes offerings in academic and non-academic subjects, from physical education to mathematics and science. While not inconsistent, Texas course requirements for graduation lack explicit connection to other policies. Because specific courses in mathematics and the content of required courses in either mathematics or social studies or the sequence of required courses are not specified, graduation course requirements lack prescriptiveness. However, they are based on a variety of sources of authority and are powerful.

Texas requires that high school students pass a test of academic skills in reading, writing, mathematics, English language arts, social studies (to be added), and science as a condition of graduation. The student test in mathematics is based directly on the essential elements and sub-elements of the state guidelines. Student tests, because they are consistent with the essential elements and sub-elements, are consistent with other curriculum control policies. According to a TEA estimate, the present test, called the Texas Assessment of Academic Skills (TAAS), covers more of the essential elements than previous state tests (TABS or TEAMS). The tests are based on legal authority given by the state, and their power derives from the fact that students must pass the exit test in order to graduate.

Texas evaluates its public schools periodically in order to accredit them. Compared to New York and Florida's systems of school evaluation, those of Texas are more prescriptive and more consistent with the curriculum guides. Compared with California's quality criteria, Texas' system is equally prescriptive and consistent with other policies, but Texas' school evaluation system is more powerful than California's. Texas schools found not in compliance with Texas educational law may find themselves under the supervision of state-appointed monitors, and may ultimately lose their state accreditation.

Texas' teacher certification, inservice and "career ladder" policies control teacher development more extensively than any of the other states in this report. Like Florida, and unlike California and New York, Texas requires teachers to pass a college-level competency test and a test of pedagogical and subject knowledge prior to certification. Unlike other states,[1] Texas manages inservice and teacher evaluation from the state level through policies such as career ladder system. Through the career ladder system, Texas approves all teacher inservice and mandates state-wide use of a TEA evaluation system. Only the subject knowledge component of the teacher certification test matches the state curriculum guidelines; and the match is more general than specific. Teacher certification and development policies in Texas are highly prescriptive, authoritative, and powerful.

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[1] Florida attempted to implement a succession of teacher incentive/control plans, but now has stopped experimenting with them due partly to political opposition from the Florida Education Association or lack of funding or both.

State textbook policy is a key element in Texas' network of curriculum control policies. All changes in the state curriculum rules are first announced in textbook proclamations. In this way, Texas attempts to make textbooks reflect state curriculum goals. The textbook adoption system is highly prescriptive, consistent with other curriculum policies, authoritative and powerful.

II. THE POLICIES

A. The Curriculum Guidelines

Curriculum guidelines for mathematics and social studies share a similar structure. Chapter 75 and the TEA curriculum guideline documents break each subject potentially leading to graduation into what the authors call essential elements and sub-elements. The essential elements describe what students should learn in a course. The sub-elements are more specific behavioral objectives for students; the sub-elements allegedly follow from the elements. An example of the elements-sub-elements structure from the course guideline for Algebra I is described below in Table 1.

Table 1-Elements and sub-elements in part of the mathematics curriculum guidelines:

Essential elements	Sub-elements
Algebra I shall include the following essential elements:	The student shall be provided opportunities to:
(3) Linear equations and inequalities in two variables	(A) solve equations and formulas in two variables
	(B) find intercepts and slope to graph equations
	(C) identify and graph functions
	(D) find the equation of a line
	(E) use the graphing, addition, and substitution methods of solving a system of equations
	(F) graph systems of inequalities
	(G) use equations and inequalities in applications and problem-solving situations

In addition to essential and sub-elements for every course, the TEA frameworks include general advice on many topics concerning the subject and subject areas. In mathematics, this includes the following: the scope and sequence of the K-8 and 9-12 curricula, a statement of general philosophy of the subject area, requirements for high school graduation, how to plan course offerings for each subject (including advice for small schools), recommended sequences, honors courses, information for teaching "special student populations," references (including a statement about mathematics instruction from the National Council of Teachers of Mathematics), suggestions for teacher development and inservice, a key to what essential elements and sub-elements the TAAS test assesses, and two scope and sequence charts. The entire framework for mathematics K-12 is about 137 pages long, including the table of contents and the appendices.

Texas curriculum guidelines reflect the state's concern that not all Texas schools were offering a complete curriculum and were not teaching the most important aspects of subjects. Texas guidelines focus on requiring that schools/teachers offer a "balanced" curriculum based on the teaching/learning of minimum standards of content knowledge. Balance refers to the school's offering a wide range of courses (from health, vocational and business education to academic subjects and fine arts). The State Board, through the TEA, intends to insure that all high school schools teach the essential elements, it does not intend to prescribe in detail the content or methods of particular courses. The essential elements intend to allow teachers and schools flexibility in implementation (Respondent 10).

Texas curriculum control policies originally focused on offering a level of basic instruction to all students. The minimum competency focus of the guidelines is underscored by Texas Education Code (21.101):

> The State Board of Education by rule shall designate the essential elements of each subject listed in Subsection (a) of this section and shall require each district to provide instruction in those elements at appropriate grade levels. In order to be accredited, a district must provide instruction in those essential elements as specified by the state board.

The legislature does not require but rather recommends that districts exceed minimum requirements of the law: "districts are encouraged to exceed the minimum requirements of the law" (TXCH75, p.1). Texas curriculum guidelines specify a minimum competency curriculum, the essential elements, for all Texas students. All school districts must offer instruction in the essential elements. In this way, the state hopes to guarantee that all students will learn a common core of subject material, and thus receive a "well-balanced curriculum."

While Texas directs its curriculum toward basic understandings for all students, since 1981 the Texas Education Agency (TEA) has expanded its mathematics (and

English Language Arts) curriculum beyond basic skills into higher order thinking skills. This is especially true in mathematics, where TEA has included more of the essential elements in its tests and made test items more rigorous. As the new testing program documents argue:

> The broadened scope of the new assessment program will also allow for a different focus, one which better addresses the academic requirements of the 1990s. Those skill areas which demand little more than rote memorization will be de-emphasized, while those areas which improve a student's ability to think independently, read critically, write clearly, and solve problems logically will receive increased emphasis. This new emphasis in Texas is in keeping with the current national trend in education, which stresses the importance and even necessity, of teaching students higher order thinking skills (TXTAAS, p. i).

B. Course Requirements

Section 21.101 of the Texas Education Code requires that schools offer a well-balanced curriculum. By that the Texas legislature meant that schools must offer:

-English language arts
-other languages (to the extent possible)
-mathematics
-science
-health
-physical education
-fine arts
-social studies
-economics, with emphasis on the free enterprise system and its benefits
-business education
-vocational education
-Texas and United States history as individual subjects and in reading courses.

The Legislature further specified that the State Board of Education designate what courses and sequence of courses would meet the standards of a well-balanced curriculum (TXCH75, p. 1)

Texas requires that students take any three years of mathematics, but specifies that students take three years of particular courses in social studies. All Texas students must take two and one-half years of social studies: American History (one year), American Government (one half-year), and one year of World History or World Geography. One-half credit of economics that focuses on the free enterprise system and its benefits is also required. Texas does not include the economics requirement as part

of its social studies requirement. It is listed separately.

C. Student Testing Policies

Since 1981, Texas has tested student skills in mathematics, reading and writing at grades 3, 5, 7, 9 and 11. The present student testing system is the third since 1980. According to the TEA, the two earlier versions, the TABS and TEAMS tests, tested fewer essential elements and were less rigorous than the present version, the Texas Assessment of Academic Skills (TAAS). TAAS addresses two other problems with previous tests: teaching to the test, and making minimum competency the maximum expectation (TXTAAS, i). Previously, student tests were administered in February. Some teachers prepared from September to February for the tests, covering other content after the tests (Respondent 2). Thus, teachers of required mathematics courses tended to teach to the test, and cover little material beyond that on the test. A Texas Education Agency reports that such practices may have contributed to higher than expected student pass rates. Beginning in 1990, the TAAS will be administered in October testing material from the previous year. That is, the 11th grade test will test basic competency in math through the 10th grade. Since the exit test is required for graduation, students who fail the test may not graduate. However, since the test is given in both October and April and since students first take the test in October of the junior year, students actually have four chances to pass any of the main portions of the test before they graduate. Also, students can continue to attempt to retake portions of the test after they have left school (at the scheduled times) as long as they wish.

The TAAS is described in a set of eighteen booklets. There is a booklet for each grade and subject area tested, including the exit level (11). The domains of knowledge tested, objectives for testing, rationale, instructional targets, description of test items, and example questions are described in each booklet.

Instructional targets reflect the wording of the essential elements and are not intended to measure every aspect of the broadly-stated essential elements. Similarly, test sample items do not and are not intended to give teachers examples of every kind of question on the TAAS (Respondent 2). Some instructional targets are broad and sometimes ambiguously stated, and the sample test items are very specific. Thus, several test item examples seem to measure one part of the instructional target but not the other. This observation applies most to the problem-solving domain section.

A central objective of the new mathematics system is to teach students problem-solving processes, and have students apply these to non-routine problems. However, the instructional targets in the problem-solving area ask students to either use some problem-solving process or solve the problem. The sample test items only ask students to solve the problem, and do not ask students to develop alternative strategies, test them against the data, or other processes for the solution of non-routine problems. The test item examples instead ask students to use routine formulas to solve routine problems.

Four out of thirteen TAAS mathematics skill instructional objectives concern non-routine problem-solving: estimating solutions to a problem situation, determining solution strategies, solving problems using mathematical representation, and evaluating the reasonableness of a solution (TAASR, p. 156). However, sample items in the mathematics exit level test booklet provide clearer examples of the other nine domains than the four concerning non-routine problem-solving (e.g., TAASTX, pp. 27-29). According to one official, TAAS intentionally avoids levels of prescriptiveness in test booklet samples that might encourage teachers "teaching to the test" (Respondent 2).

D. School Evaluation Policies

All public schools in Texas must be accredited in order to operate. TEA accreditation is a large operation. The accreditation division budget is close to $3 million per year. Most of that budget is salaries, fringe benefits, and travel for state officials. The budget for the accreditation division does not include the time other TEA officials spend on accreditation. Especially in the larger districts, many of the visitors come from school districts and are trained by the TEA to participate in evaluation. For example, the TEA trains principals, supervisors and school board members in the accreditation policies.

By law, all 1060 school districts and all schools within those districts must be evaluated on a regular basis. Texas' school accreditation system requires a visit by a state site team, composed mainly of former school administrators, and sometimes subject specialists. Site visits must include at least two state officials but the number of total visitors in the larger districts, such as Fort Worth, varies with the size of the district. The Fort Worth visit involved 100 state officials or state-trained officials. Visits used to be every five years, but now they could be more or less frequent: sooner if in trouble, later if exemplary (Respondent 4 and Respondent 5).

Accreditation site visitors look for compliance with state educational law. They gather information on demographics, effective school characteristics, the existence of required plans and documents, the safety of the school, the governance of the school and a variety of other factors. They use a series of state-required interview protocols, at least interviewing a variety of persons, from the nurses to teachers to school board members.

In each school, site visitors investigate the extent to which the school offers a curriculum that teaches the essential elements. To do so, they typically interview "team leaders" (subject department chairs). In high schools, they also interview at least two teachers from each subject department. In many school districts, all personnel are visited (Respondent 10).

One of the overall purposes of the site visit is to determine if the school offers a "balanced curriculum" that follows the essential elements. To determine this, site visitors can require that teachers produce copies of the essential elements. They can also

require teachers to show their gradebooks, lesson plans and show how and where they cover the essential elements. They look at teacher tests, textbooks (must be selected from a list of as many as eight textbooks for a subject area or course). They also observe instruction in classrooms to check on whether teachers are teaching the elements. The number of monitors varies with the size of the district. The accreditation covers both district and campus. TEA curriculum experts are likely to be part of a site team, especially in the last couple of years (Respondent 4).

E. Teacher Certification and Staff Development

All Texas public school teachers are paid according to their position on a career ladder. To get on the ladder, teachers must pass a Texas college-level entrance test in reading writing and mathematics (the Texas Academic Skills Program[TASP]) required of all college students. The TEA booklet that describes the TASP lists testing criteria that resemble those of the TAAS. The main difference between the TAAS and TASP are that the TASP test covers more algebraic and geometric content than that covered in the TAAS. In addition, they must pass teacher certification tests (EXCET) in pedagogy and their specialty.

In order to advance on the ladder, teachers must complete approved inservice or college courses beyond their bachelors degree, and meet targets on the Texas Teacher Appraisal System (TTAS). Teachers who do not complete inservice/college credits and increase their scores on the TTAS may remain at the entry salary level indefinitely (Respondent 3).

Teacher certification tests. To practice teaching in a public school, teachers must pass three tests. First, like other college students, they must pass a general test of college-level competencies. In March, 1989, about 90 percent (and in June about 86 percent) of all those wishing to enter teacher education programs passed the TASP. Prior to licensure, teachers must pass two other tests, one covering a general knowledge of pedagogy, and the other, subject matter knowledge in one's teaching specialty. Secondary school teachers must demonstrate a knowledge of their subject area, e.g., mathematics, social studies. To teach any mathematics course, teachers must pass a general secondary mathematics test. To teach multiple courses in social studies, teachers must pass the certification exam (called the "composite") that covers economics, government, and geography. If they desire to teach only one subject, e.g., economics, teachers can take a separate certification exam in that subject.

Certification tests appear to be moderately challenging. From October 1988 to July 1989, about 70 percent of social studies candidates passed the composite, and about 75 percent passed the history certification examination. In the same time period, about 72 percent passed the mathematics examination. There has been little change in these pass rates since the first administration of EXCET tests. Such rates for either of the certification tests indicate that the test is not so easy that all who take it are guaranteed

to pass.

Teacher pre-service education programs. Like other states, Texas requires that teacher education institutions receive state approval. Unlike other states, Texas specifies many aspects of teacher education on the undergraduate and graduate levels that other states leave to the discretion of colleges and universities. For example, Texas requires that schools of education offer instruction in the essential elements.

Professional development. Inservice/college credits (called Advanced Academic Training or AAT) and target scores on the TTAS are required for teachers to advance on the career ladder. TEA specifies the areas of inservice/college credit that will qualify for movement on the career ladder. There are ten areas altogether. Some concern subject matter competence and knowledge, some concern pedagogical methods and some concern more specific topics, e.g., working with handicapped students. To qualify for movement on the career ladder, teachers should take more content-focused credits than pedagogy or general topics (Respondent 4). TEA requires that all inservice providers register their programs with the state. All providers must identify which of the ten possible areas are covered by the inservice. TEA specifies the minimum length of inservice offerings for teachers, the qualification of the presenters, and necessary components of inservice sessions (e.g., pre-assessment and post-assessment of participants knowledge or skills). Because it has a record of what inservice/college credit sessions offer and can establish minimum standards about the delivery of inservice, TEA can estimate the extent to which a teacher is probably enhancing his or her knowledge of the subject.

Teacher evaluation. In addition to requiring that teachers pass state subject area examinations and complete inservice/college credits, Texas requires that schools evaluate teachers periodically. Probationary and first year teachers must be evaluated twice each year, and more experienced teachers (career ladder levels two through four) must be evaluated annually. There must be two evaluators: the teacher's supervisor, and someone else who holds either an administrator or supervisor license. Evaluators must use the state-designed system, the TTAS, including an "Appraiser's Manual." The latter contains 119 pages and specifies the substance and process of the appraisal. Topics included in the manual range from the historical development of teacher appraisal in Texas to sample evaluation forms administrators should use to the steps of the process from beginning to end.

F. Textbook Policy

Texas' and Florida's textbook adoption systems are similar. Like Florida, Texas has codified the process of textbook adoption and has specified the desirable content of textbooks be the state-sponsored curriculum. The textbook adoption process consists of several steps that take place over about two years, including:

1) A proclamation. A proclamation includes the courses for which textbooks will be selected, the essential elements a textbook should cover, and a schedule of upcoming steps in the adoption process.
2) Formal public hearings before the state Board of Education on the content guidelines.
3) Selection of, and meetings of, the state textbook committees by subject area, with opportunities for teacher, publisher and public input.
4) Formal publishing of findings on textbooks, accompanied by opportunities for appeals and revisions, followed by more hearings.
5) Final formal SBOE adoption of textbooks for the next six years.

The chief outcome of this process is that up to eight textbooks for each course under consideration in the adoption cycle may be chosen. Unless they have a waiver, districts must use state-adopted textbooks.

III. ANALYSIS OF THE POLICIES

A. Consistency

1. Guidelines and Cross-Policy Consistency

SBOE can grant waivers to school districts to use state funds to purchase non-adopted materials (Respondent 10, Chapter 67). Texas formally coordinates its curriculum control policies so that they reinforce each other. Changes in curriculum begin with formal textbook proclamations. A textbook proclamation lists the elements and sub-elements that textbooks must include. The TEA uses proclamations to introduce changes in essential elements and sub-elements for the course in question. Because textbook regulations require that textbooks teach the essential elements, and require that schools pick approved textbooks, the curriculum guidelines, textbook policies and school evaluation policies are linked.

In addition to driving the textbook policies, the essential elements drive student tests. The student test of mathematics required for graduation (the exit-level TAAS, given in the 11th grade) conforms to the curriculum essential elements and sub-elements. Social studies (and science) knowledge is not presently part of the exit-level TAAS but is scheduled for testing in the mid-1990s. When social studies is added, the essential elements will form the basis for the TAAS tests.

School evaluation procedures cover more than essential elements. But a major part of Texas' school evaluation site visit includes an examination of how well teachers are following the state curriculum. Part of the school evaluation (accreditation) criteria require that teachers teach the essential elements. The essential elements drive the rest of the curriculum control system. Changes in curriculum are followed by changes in

other areas. I found no evidence of the reverse.

2. Course Requirements and Cross-Policy Consistency

Course requirements are not connected with testing, teacher certification/development, with textbook selection, or with the essential elements. Of course, this lack of direct connection is common to other states in this study. New York is the only state that requires that students pass course-based tests for graduation.

3. Student Testing and Cross-Policy Consistency

The student testing booklet, including instructional targets and sample test items, do not necessarily reflect the objective they intend to measure. This tends to create inconsistencies between the sample test items and both the essential elements and the instructional targets that represent them. For example, several test item examples seem to measure one part of the instructional target but not the other. This observation applies most to the problem-solving domain section. The TAAS is intended to be consistent with Texas curriculum guidelines for mathematics. But, because of ambiguous and broad instructional targets derived from broadly-phrased essential elements and sub-elements, whether the TAAS and the curriculum guides are consistent is unclear.

Unless it approves a waiver for a district, Texas also requires the use of adopted textbooks. Since the textbooks conform with the essential elements and the essential elements drive state tests, the TAAS is indirectly matched with the textbook requirements. Of course, the extent to which textbook content and the TAAS match is conditioned by ambiguity and lack of specificity in the essential elements.

The TAAS appears broadly consistent with the school evaluation (accreditation) program. State personnel visit every school in the state at periodic interviews (see school evaluation section for details on how often). During site visits at high schools, state accreditation personnel interview a few teachers in each subject area. In that interview, state personnel ask teachers to discuss how they use student testing data to aid in the construction of students' educational programs.

The TAAS connects indirectly with other state policies through the essential elements. Though not inconsistent, the TAAS seems least directly associated with staff certification and inservice policies. Teacher certification tests, staff career ladder evaluation systems and staff inservice appear largely unconnected with student exit tests. Texas teachers must pass certification tests in their subjects. But the certification test in mathematics (the EXCET) objectives for mathematics differ considerably from the objectives and learning targets in TAAS. For example, the EXCET test breaks down secondary school mathematics objectives into four categories: basic principles, algebra and advanced mathematics, geometry and trigonometry, and applications. But the TAAS exit test measures understanding of number concepts, algebraic and other mathematical

relations, geometric concepts, measurement concepts, probability and statistics, mathematical operations and problem-solving. TEA may not intend to link the TAAS to the EXCET. As one official noted, teachers are expected to know much more mathematics content than the TAAS measures (Respondent 2).

Texas also works to control the quality of teaching through its career ladder system. This system mandates teacher inservice and periodic evaluation of teaching in order for teachers to advance on the salary schedule. The state must approve inservice/college credits and it mandates the use of its own teaching evaluation instrument. Yet, the state does not link either inservice or teacher evaluation to student test outcomes.

4. School Evaluation and Cross-Policy Consistency

The accreditation visit is consistent with the main hubs of the curriculum control system: curriculum guides, testing of students, and teacher certification. School visits examine the extent to which the district and school offer a curriculum based on the essential elements to all students. They also examine the extent to which testing outcomes match student grades; the extent to which teachers use test results to guide teaching and re-teaching strategies; and the extent to which school planning takes student testing results into account. Finally, Texas school evaluators check the certification of all the teachers to help insure that teachers are certified in their area. In other words, Texas school evaluators investigate the extent to which schools actually carry out state curriculum control mandates in guidelines, testing, and teacher certification.

5. Teacher Certification/Development and Cross-Policy Consistency

While highly prescriptive, teacher programs lack consistency with other curriculum control policies. In particular, the state's essential elements seem to be unmatched with all teacher programs except the teacher education institutional regulations. The latter specify that teacher training must include familiarizing students with the essential elements (TXCH137, P. 5). Textbook policies appear to be consistent with the teacher certification test. Teachers are advised to study state-approved student textbooks to prepare for their certification tests in social studies and mathematics (TXEXCETM, p. 4). But the certification tests in secondary mathematics and social studies appear to test teacher knowledge of content and processes unrelated to the essential elements, or to student TAAS test criteria. Though the state's school evaluation personnel look for evidence of teachers incorporating essential elements, separate guidelines used to evaluate teachers for tenure, raises, and promotions practically ignores these elements. For example, the "Appraiser's Manual" is silent on evaluating teachers' coverage of the essential elements. Coverage of the essential elements is implied by only one item out of 65 in the entire list of "indicators." This indicator specifies that teachers follow "statutory and Texas Education Agency regulations" (TXAPPMAN, p. 23).

While in general inservice requirements do not require teachers to learn more about teaching the state curriculum, Texas mathematics offers curriculum-focused staff development programs through EESA Title II. Texas offers special training for mathematics teachers of all grade levels in a variety of topics connected with teaching the new mathematics. For example, TEA offers 18 hour inservice modules in geometry, algebra, pre-calculus, calculators and computers for high school teachers. For teachers of the lower grades, TEA offers courses in the teaching of problem-solving, probability and statistics, computation and error diagnosis, measurement and geometry.

There are some consistencies between some teacher certification/staff development programs and other curriculum control policies. The mathematics inservice effort and the teacher education institutional regulations are examples of such cross-policy consistency. However, the lack of connection between the teacher appraisal system or teacher certification examinations and the curriculum guidelines points to major inconsistencies.

6. Instructional Materials and Cross-Policy Consistency

Because textbook proclamations require that textbooks include all of the essential elements of a course, there is considerable consistency between the curriculum guidelines, student tests, and textbooks. This consistency is enhanced by TEA policy to use proclamations to introduce curriculum changes. Changes in curriculum and texts go hand in hand.

B. Prescriptiveness

1. Curriculum Guidelines

a) social studies

The Texas social studies curriculum guides are extensive, but not particularly specific. The guidelines are more prescriptive with respect to content than with respect to teaching methods or processes. Texas high school social studies guidelines list several essential elements in the form of broad topics to be covered in required courses. The essential elements (topics) for United States history (from reconstruction to the present) include:

-the emergence of the United States as a world power
-geographic influences on the historical development of the United States
-economic development of the United States
-social and cultural developments of the United States
-political development of the United States

Topics for world history include:

-development of early civilizations
-historical development of Western civilization
-historical development of other regions
-geographic influences on world history
-developments of the twentieth century

These topics cover a broad range of content. The sub-elements are written in the form of behavioral objectives for students. Though more specific than the elements (topics), sub-elements lack specificity at the level of instruction. That is, they contain ambiguous terms, lack sequencing information, and lack suggestions on teaching strategies. For example, the United States history, economic development, and growth topic includes eight sub-elements, three of which are listed below:

-understand the development of the United states banking system;
-analyze the impact of new developments in science and technology on business, industry, and agriculture;
-explain the impact of various wars on the United states;
-understand the impact of business cycles, deflation, and inflation on the United States.

Ambiguous terms include "understand," "the impact," "various wars," and "new developments." First, "understand" is ambiguous. What kind of understanding is expected? Furthermore, how are teachers to understand what aspects of the development of the U.S. banking system are most important? Second, the guidelines do not specify the order in which teachers might cover the economic development sub-elements. Third, the guidelines do not prescribe unit organization. Fourth, the social studies guidelines do not prescribe how teachers might attempt to teach these elements. Thus, social studies essential elements are extensive, they contain ambiguous terms, and leave sequencing, unit organization and teaching methods up to local schools and teachers. Ambiguity gives social studies teachers and school districts considerable flexibility in deciding how to teach what Texas requires.

(b) mathematics

Essential elements for mathematics have been under revision since 1988. In 1988, the TEA began a series of changes in all mathematics courses to bring them into alignment with NCTM standards:

> The general direction for revisions are those described earlier, supporting The National Council of Teachers of Mathematics' Curriculum and Evaluation Standards for School Mathematics, and focusing on all students becoming proficient problem-solvers who can think quantitatively in a technological society (TXSTART, p. 4).

All course essential elements will be adopted by the fall of 1994. However, the elements for mathematics courses most frequently taken have already been approved by the State Board of Education (SBOE). The following discussion of the prescriptiveness of the new mathematics is based on textbook proclamations from 1990. Textbook proclamations announce changes in essential elements; the SBOE will adopt these 1990 proclamations in the fall of 1991. The essential elements in informal geometry identify ten elements, each of which contain four or more sub-elements. Compared to the social studies sub-elements, mathematics sub-elements are more specific. The mathematics guidelines prescribe both the content and process more specifically than social studies. However, like those in social studies, the mathematics guidelines lack a sequence and unit structure.

More specific identification of content is evident in the sub-elements for the informal geometry element "10," "volume and surface area:"

> 10.1 use of concrete models or computer software to develop the formulas for lateral and surface area of common solids
> 10.3 use of models and manipulatives to develop and generalize the concept of the volume of prisms/cylinders with polygonal/circular bases as the product of the area of the base and the height
> 10.4 use of models and manipulatives to develop and generalize the concept of the volume of cones/pyramids as one-third the product of the area of the base and the height (TXPR67, v-142).

The sub-elements describe more about the conditions under which teaching and learning might occur. For example, the sub-elements prescribe the use of models and manipulatives in the process of teaching. Second, the sub-elements prescribe what the student will learn, e.g., that the volume of a solid is a product of the base and height. There is less potential for misunderstanding or ambiguity (and teacher creativity) in the sub-elements concerning content coverage in the mathematics guidelines.

The current mathematics guidelines add to the prescriptiveness of the content criteria by specifying instructional methods for each course. For example, Texas prescribes the following informal geometry instructional strategies:

> 3) contain a variety of laboratory activities for exploration and development of geometric concepts
> 5) provide activities which require students to explore alternative approaches to problems

6) contain specific activities designed to teach students to use a variety of problem- solving strategies
8) use calculators and/or computers for teacher demonstration and student exploration and problem-solving (TXPR67, p. v-142).

Table 2, below, indicates the overall prescriptiveness of Texas' curriculum guidelines according to the eight criteria listed in the introduction to the case studies. Taken alone, the mathematics guidelines are moderately prescriptive at the course level. However, especially when combined with social studies, curriculum guidelines lack prescriptiveness at the unit level and below. When compared with New York's extensive treatment of subject rationale and specificity concerning content and teaching methods on the unit level, Texas' curriculum guidelines do not prescribe as much as they might.

Table 2-Prescriptiveness of Texas curriculum guidelines

Dimension of prescriptiveness	Extent of depth and breadth
Overall goals or mission of subject curriculum	low*
Course objectives	low*
Invariate course sequences	none
Unit objectives	none
Lesson structure & objectives	none
Lesson sequencing	none
Exemplary activities & teaching methods	low*
Materials specified	moderate
Overall	low

*=mathematics considerably more prescriptive than social studies

2. Course Requirements

Like other states' course requirements policies (except New York's), Texas' policies are minimally prescriptive. Texas prescribes more mathematics courses than other states and about the same number of social studies courses as other states. Though Texas requires more mathematics courses than New York or California, any three mathematics courses, in any sequence, can lead to graduation. This latter fact tends to reduce the prescriptiveness of the course requirements. As they are in other states, social studies course requirements are more specific. Texas requires the standard

one year each of American and World History, Government and Economics.

3. Student Testing

Presently, there are student tests for mathematics, reading and writing (none for social studies). The Mathematics TAAS 36-page booklet's hierarchical organization and clear description make the TAAS relatively prescriptive. That is, the specific test item examples seem to measure some specific aspect of the broader concept. For example, the TAAS booklet identifies three domains of mathematical knowledge, each described by a paragraph; those domains are concepts, operations and problem-solving. The booklet lists five objectives under the concept, four under the operations, and four under the problem-solving domain. Each objective is described with a rationale and several instructional targets. Instructional targets describe understandings students should gain from mathematics at the appropriate grade level. The booklet then lists two sample test items for each instructional target. In this way, test items are couched in terms of more comprehensive objectives and domains.

The description of test items tells teachers the type of cognitive operations students will be expected to perform and what kind of formats test items might use. This description also indicates four criteria for the design of student answer choices. For example, the criteria indicate that some answer choices will be expressed as real numbers of numerical expressions, some will be given as number lines, some will include measurement units, and incorrect answers will reflect conceptual misunderstandings, improper use of mathematical terminology, or common errors in computation (TXTAAS, p. 6).

The TAAS booklet lists each sample test item in a multiple choice format similar to the way such an item will appear on the student test. The correct answer is indicated by a star. For example, the instructional target "compare and order real numbers" lists a test item that asks students to select which of four sets of decimals is "in order from least to greatest" (TXTAAS, p. 6).

The TAAS booklet, like California's Rational and Content for Mathematics test booklet, is likely to give teachers a good idea of the kinds of questions that will be used to assess student knowledge of mathematics. Its hierarchical structure and its straightforward explanations are both extensive and specific about mathematics content and how students will be expected to apply knowledge of that content. However, to help teachers understand how problem-solving will be tested and evaluated, the TAAS exit level booklet could provide more guidance than it does presently.

4. School Evaluation System

The content of the school accreditation site visit is extensively and specifically prescriptive. The site visit is extensive. Site visitors talk to a wide range of individuals,

and cover a wide range of aspects of schools. For example, visitors interview individuals representing at least eleven separate roles in the school from teachers to school board members. Second, the visit collects a wide range of information. For example, visitors collect data on demographics, school improvement plans, budgeting, guidance, health services, curriculum guides and their uses, management of the school, effective schools correlates, school safety and several special education programs. The guide for site visitors is over 110 pages long.

School accreditation is also specific. The Data Collection and Summary Guide includes the actual interview guides for each type of position. It also includes directions on what kind of data to collect, how to conduct the visit, how to summarize and report results, and how to evaluate the data. The visit includes specific data gathering on the extent to which teachers probably follow the curriculum guides. Interviewers examine the district and school curriculum guides, interview teachers on the usage of the guides, and ask teachers to show how the essential elements are incorporated into instruction, grading of students and remediation (TXACCR, pp. 2-11, 2-16, 2-34, 3-14a). Teachers must show evaluators their grade books, and grades must be based on students mastery of the essential elements. For instance, if teachers grade students on attendance rather than achievement in the essential elements, site visitors note that as a violation to be corrected (TXCPL, II-5).

Texas school accreditation visits are highly prescriptive. They cover wide range of school activities, and they include interviews with a wide range of school personnel. The document that guides accreditation visits specifies the kind of data to be collected, how the data should be organized, and how it should be interpreted. The steps of the accreditation visit and follow-up activities are described in considerable detail.

5. Teacher Certification and Professional Development

Texas prescribes the content and processes of teacher development more extensively and specifically than do other states. No other state in this study attempts to regulate teachers from certification through the teaching career. No other state in this study prescribes state-constructed teacher certification exams, state-constructed teacher evaluation, or state-approved inservice. No other state in our study has extensive and specific quality indicators for teacher education institutions. Because of this, Texas' teacher programs are much more prescriptive than those of other states. Texas teacher education regulations are good examples of the extensiveness and specificity of Texas teacher programs.

For an example of extensiveness, Chapter 137, Subchapter K of Texas Administrative Code requires that teacher training institutions meet several standards, including:

1) policy commitment,
2) appropriate "organizational structure,"
3) the program's "professional education unit,"
4) the program and curriculum characteristics,
5) the characteristics of the teacher education faculty, and
6) student development services, of facilities.

Teacher educational institutions must also conform with specific regulations. For example, a policy commitment is defined by programs meeting eight quality indicators, including:

1) planning documents that confirm the commitment of the institution to teacher education
2) placement of the professional education unit within the institution to allow it to function appropriately
3) authority for the administrative head of the professional education unit similar to that of comparable units
4) fair distribution of faculty workload
5) the workload of supervisors not exceeding an average of two student teachers per semester hour of workload credit
6) class sizes appropriate to program objectives
7) faculty merit systems that include recognition of performance in both scholarly and field-based innovative and creative programs
8) the institution providing for continuing education for its own faculty.

Each of the standards, including the six listed earlier, contains a similarly detailed list of quality indicators. Thus, state controls on teachers are highly prescriptive; both extensive and detailed.

6. Textbook Adoption Procedures

Texas textbook adoption policy is prescriptive but does not limit districts to texts available from major publishers. Also, due to its waiver policy, districts can select even non-adopted texts and buy them with state funds. Textbook adoption policy is prescriptive. It specifies many aspects of both the content of texts and the selection process. Every six years, the TEA proposes a set of standards to guide the acquisition of new textbooks. Ultimately, the SBOE will approve up to eight textbooks for each course. Unless districts receive a waiver under Chapter 67 (effective April, 1991), they must select texts from the state-approved list. Under Chapter 67, if granted a waiver, districts can use state monies to buy non-adopted texts (Respondent 10). The content of all textbooks is specified by a listing of the essential elements for that course. The process is extensive and specific. TEA identifies all the steps of textbook adoption from preliminary submission of new essential elements to the school district's purchase of textbooks. Altogether there are 55 separate steps listed in the two-year adoption process

(TXPROCL, pp. v-35-v-41). Textbook policy prescribes more than the textbook content for students. It also prescribes content for teacher materials and electronic media. Because districts can select from up to eight textbooks per course or subject area, texts from most major publishers are available.

C. Authority

1. The Guidelines

Texas curriculum guidelines are legally authoritative, and appeal to both normative and expert authority. The essential elements and sub-elements for every course offered in high school are formally approved by the SBOE and become part of Chapter 75, the Board's "Rules for Curriculum." These rules are over 350 pages long, and cover essential elements in all the subjects listed as part of a balanced curriculum.

In addition to their legal authority, the guidelines appeal to traditional, normative or expert authority, or all three. The social studies guidelines appeal to all three sources. Since they have evolved from several state meetings of teachers, supervisors and administrators, they tend to reflect common practice and content in Texas social studies. However, they also appeal to the expertise of state and national experts. The guidelines reflect the expert advice of social studies professionals in the state (professors, teachers and supervisors); and they reference national social studies subject standards, i.e., those of the National Council for the Social Studies. The social studies guidelines also appeal to traditional authority in their emphasis on the general legislative mandates and TEA regulations on the learning of patriotism, on learning to function in a "free enterprise" system and their emphasis on learning the "basic values of our state and national heritage" (TXCH75, p.3).

The mathematics curriculum guidelines are legally authoritative and they explicitly appeal to expert authority. Implicitly they reject normative and traditional authority. The latest Texas mathematics guidelines will adopt a program similar to that of California. That is, the new guidelines appear to reject normative and traditional mathematics. The new guidelines will replace the old with a program that emphasizes spiraled teaching/learning of mathematics concepts with increasing depth and complexity, hands-on learning, the extensive use of calculators, and focusing on the solution of non-routine problems. Texas mathematics personnel base their advocacy of such mathematics on National Council of Teachers of Mathematics standards. Thus, they appeal directly to the expertise of national curriculum experts. According to the TEA's "New Directions for Mathematics" paper:

> Forces for change include a dramatic shift in mathematics necessary for citizens in an increasingly technological society, changing expectations for workers entering the workforce, research on the redundance in the current United states mathematics curriculum, and the need to (sic) more

thoroughly educate the total population (Everybody Counts, 1988).

The "New Directions" document goes on to claim that "These directions are consistent with those described at the national level in the National Council of Teachers of Mathematics' Curriculum and Evaluation Standards for School Mathematics" (TXND, p.3).

2. Course Requirements

Like other states' course requirements in this study, Texas requirements appeal to legal authority. By law, schools must offer a "balanced curriculum."

3. Student Testing

The main authority for state tests lies in state law. Chapter 101, itself based on educational law, requires that the State Board of Education periodically assess student progress toward the essential elements in reading, writing and mathematics, and requires that students pass an exit test prior to graduation. The tests appeal to the expertise of state curriculum officials, and state teachers, administrators and professors, all of whom share in decisions about what to test. According to one state document describing the development of the new mathematics curriculum, both past and future test development include teacher and administrator participation.

> During the past six months the concept of setting a mastery standard on TAAS at a level comparable to TEAMS and establishing a TAAS academic excellence standard has been discussed with more than 1,200 Texas educators, including teachers, elementary and secondary principals, research staffs, local school board members, and more recently at the Administrators Mid-Winter Conference on Education. The idea of two standards has been received favorably by all levels of Texas educators.
>
> In March (1990), Texas educator advisory committees will be convened to discuss standard setting on the exit level TAAS tests. These committees will examine actual test instruments and will be presented data from the TAAS/TEAMS equating study. These committees will make recommendations to the Agency about TAAS mastery standards and TAAS academic excellence standards. These recommendations will be presented to the Board at the time that standards are adopted for the TAAS tests (TXID, p.3).

Texas seeks out expert opinion from state educators. In doing so, it may appeal more to common practice and the expertise of its teachers and administrators than if there were no consultation. However, since the mathematics component will represent a new conception of mathematics content, the TAAS mathematics section may not reflect either

current practice (normative authority) or tradition.

4. School Evaluation

The school evaluation system in Texas is legally authoritative, and it appeals to the authority of expertise. The Legislature and State Board of Education, through TEA regulations, authorizes periodic visitation, and allows the TEA to require that schools correct deficiencies. The specific authority for school accreditation policies comes from the SBOE's "Long Range Plan" for public education (TXACCREP, p. 1). This legal authority is complemented by expert authority. The school accreditation division hires evaluators with at least three years successful school administration experience (Respondent 4, Respondent 5). In addition, curriculum expertise is provided by TEA curriculum specialists, who form part of the evaluation team. Finally, similar to New York and California, Texas has incorporated effective schools correlates into the evaluation. This may indicate an appeal to current trends in research on school administration.

5. Teacher Certification/Development Programs

All of the teacher development programs appeal to legal authority. All teacher programs are based on legislation or TEA regulations. In addition, the teacher appraisal system appeals to expert and normative authority. The "Appraiser's Manual" lists several published sources that validate its standards and indicators. The manual also explains that, over several years, TEA has consulted with administrators and teachers in developing its evaluation criteria. Therefore, the system appeals not only to expertise but also to standards of evaluation that possibly reflect common practice in Texas schools.

6. Instructional Materials Policy

The Texas legislature and TEA rules legally authorize Texas textbook adoption policies. Chapter 12 of the Texas Education code calls for state adoption of textbooks. Texas textbook policy appeals not only to legal but also expert authority. Appeals to expert and normative authority are built into the multiple-step adoption process. In previous years, adoption committees contained a group of persons from different disciplines and, in some cases, occupations. These committees considered all textbooks that were in that year's adoption cycle. More recently, rules created separate committees for different subjects. Now, teachers and subject supervisors in the particular subject area make up adoption committees. The creation of specialized committees reflects the increased importance of subject expertise in textbook adoption decisions.

D. Power

1. Curriculum Guidelines

Mathematics and social studies curriculum guidelines, especially those in mathematics, are backed by the power of sanctions in several ways. First, students who have not mastered the content of the essential elements in mathematics cannot graduate. Second, teachers who have not mastered the essential elements in their subject are not allowed to teach. Third, schools whose teachers ignore teaching the essential elements may not receive accreditation. Finally, textbooks which fail to address the essential elements may not be adopted for use in the state. More than any of the other states in our study, Texas has developed more ways to back its curriculum guidelines with potentially powerful sanctions.

2. Course Requirements

Like other states' course requirements in this study, Texas course requirements are backed by the power of sanction. By law, students cannot graduate without completing 21 credits of course work. Also by law, schools must offer a "balanced curriculum."

3. Student Testing

The main power for state tests lies in state law. Chapter 101, itself based on educational law, requires that the state Board of Education periodically assess student progress toward the essential elements in reading, writing and mathematics, and requires that students pass an exit test prior to graduation. The requirement to test higher order thinking in mathematics are written into TAAS rules of 1989 (Respondent 2). Exit tests in social studies and science will be added in the 1994-95 school year.

4. School Evaluation

The school evaluation system in Texas, backed by sanctions, is powerful. The Legislature and State Board of Education, through TEA regulations, authorizes periodic visitation, and allows the TEA to require that schools correct deficiencies. Through SB417, the Legislature specifies how schools should be rated and how often schools with different ratings may be visited. With no major problems or an exemplary record, a school may be evaluated every six or seven years (interview). Major problems may require annual visits. Schools have three years to fix the problem or they may not be allowed to operate. A TEA official reported that since 1988, two schools have lost their accreditation (Respondent 4).

Schools with major problems are placed on a lowered status, i.e., not fully in compliance with the state and not fully accredited. In a typical year, 50 schools might be

placed on lowered status. Such schools may receive a warning. Rapid compliance usually follows such warnings. Of the 50, only 15-20 might still remain on such status into the next year. The TEA can exert direct power over a school. It can require that the school seek assistance. There are eight accreditation personnel who devote a majority of their time to assisting schools on lowered status obtain compliance. It can also assign a monitor or a master to the school, and make the school pay the expenses of the monitor (as much as $200 a day). Monitors and masters are former school superintendents hired by TEA to supervise the operations of the school until compliance is met. The legislature is now working on a bill whereby the state can directly fire the superintendent and hire a new one.

The reports and requirements generated by accreditation visits are lengthy (80-300 pages, depending on the violations and size of the district) and can be powerful. First, site evaluators meet with district officials and at least one school board member to explain and discuss the findings. Second, a copy of the report goes to all board members. Following the distribution of the report to the school board, the community often learns quickly about the major results. Because of the visibility of the findings, the poor school evaluations can lead to the firing of superintendents (Respondent 4).

Reports are powerful in that they require the district and TEA staff to establish compliance dates and the reports specify what must be done. In the following example, TEA evaluators prescribe curriculum improvements:

> Action required - Because of the lack of progress in the development of curriculum guides, the district has not satisfied this corrective/improvement action. Therefore, the district must submit to the Division of Accreditation a new plan for the development of curriculum guides. The plan must include the assignment of specific supervisory personnel to monitor the progress made by each teacher in developing these documents. Curriculum guides are to contain the objective of the lesson, the essential elements being addressed, the resources to be used to teach the lesson, the activities to be used, and the evaluation techniques. Remediation and enrichment activities should be included for each lesson. They should contain the same components necessary for large group instruction.
> CORRECTIVE/IMPROVEMENT ACTION IS REQUIRED
> (TXACCRREP2, p. 2).

The ability of Texas to require compliance on the level of the individual teacher's curriculum guides indicates the potential power of the state evaluation system. No other state specifies compliance with state curriculum guides at the level of teaching plans.

5. Teacher Certification/Development Policies

All of the teacher development programs are based on legislation or TEA regulations and are backed by sanctions. Teachers failing the certification exams cannot teach; educational institutions failing to meet TEA standards cannot offer teacher education programs; and inservice providers cannot provide inservice unless they comply with state standards.

6. Instructional Materials Policy

The Texas legislature and TEA rules legally authorize Texas textbook adoption policies. Chapter 12 of the Texas Education code calls for state adoption of textbooks. Textbook policies have the power of sanction. Unlike all other states studied, schools are not permitted to use textbooks outside of those adopted by the state. Neither California nor New York approve textbooks for high schools. Florida rewards all schools who use state-approved textbooks. But, with the exception of waivers, Texas requires the use of state-adopted texts.

IV. CONCLUSIONS

Texas curriculum guidelines, its essential elements and sub-elements, are extensive but lack specificity. Thus, they reflect a lack of prescriptiveness. The guidelines match other major curriculum control policies. The guidelines appeal to legal and expert authority, but only social studies guidelines appeal to normative and traditional authority. Texas undergirds the legal authority of the guidelines through its ability to prevent teachers from teaching, students from graduating, textbooks from being adopted and schools from being accredited. Therefore, the curriculum guidelines seem to possess a good deal of potential strength as control policies. But, compared to New York and California, the guidelines lack specificity at the level of instructional planning and delivery.

Course graduation requirements in Texas are legally authoritative and powerful. But they lack prescriptiveness and consistency with other guidelines. With the exception of New York's course requirements, Texas graduation standards are similar to those of other states.

Texas requires that all high school students pass an exit test in reading, writing and mathematics. Based on authority of law and expertise and the power to withhold graduation, the state exit test contributes to the strength of the curriculum control system. Because of its linkages with the essential elements in mathematics, the exit test is connected with school accreditation system and the textbook adoption system. However, teaching staff certification and career ladder policies are not linked to the testing system. Because of its links with the essential elements and its high stakes nature, the student testing system increases the likelihood that mathematics teachers (and, in time, social

studies and science teachers) will teach the essential elements on which it is based.

The Texas Education Agency evaluates the extent to which schools and districts comply with state educational law. The accreditation system is highly prescriptive, consistent with other curriculum control systems, authoritative and powerful. Unlike New York or Florida but like California, Texas uses the school evaluation system to reinforce school-wide use of the state curriculum guides. Unlike California but like New York and Florida, Texas' school evaluation system is developed and controlled at the state level. The most striking aspect of the Texas school evaluation system is its ability to require a detailed implementation of educational regulations, including curriculum-related regulations.

Texas attempts to control teacher education, certification, evaluation and inservice. Such policies are prescriptive, legally authoritative and powerful. However, with few exceptions, most teacher policies lack direct connection with the other policies, especially with essential elements. This inconsistency reduces the utility of teacher development policies as curriculum policies.

Texas textbook policies are highly prescriptive, consistent with other major curriculum control policies, authoritative, and powerful. These policies are important in their own right. They also reinforce Texas' tendency to base curriculum control on the essential elements, the main source of curriculum guidelines.

These findings are summarized in Table 3. Generally, the policy areas studied are moderately consistent with each other. Overall, Texas' curriculum control policies tend to exhibit moderate to high levels of prescriptiveness, authority, and power. Thus, Texas has a strong curriculum control system.

Table 3-Overall policy strength of Texas curriculum control policies

Policy	Consistent	Prescriptive	Authority	Power
Curriculum Guidelines	high	low	law (e) expertise (e, i)	high (s)
Course Requirements	moderate	low	law (e)	high (s)
Student Tests	moderate	moderate	law (e) expertise (i)	high (s)
School Evaluation	high	high	law (e)	high (s)
Teacher Certification/Staff Development	moderate	moderate	law (e)	high (s)
Instructional Materials	moderate	moderate	law (e) norms (i)	high (s)
Informational System	N/A*	N/A*	N/A*	N/A*
Overall	high	moderate	moderate	high

e=authority explicitly stated in documents or interviews
i=authority implicit in policies or implementation of policies
*=each part of the TEA keeps its own information; there is no agency that corresponds to either CBEDS (California), ICE (New York) or MIS (Florida).
s=sanctioning power
r=reward power

ABBREVIATIONS-TEXAS CASE STUDY

TXMFRM86	Texas' Mathematics Framework for 1986
TXCH75	Texas' Chapter 75
TEA	Texas Education Agency
TXSSFRM	Texas' Social Studies Framework for 1986
TXSTART	"Starting Today: A Guide to Improving Mathematics Programs for the 1990s" (Discussion Draft from the TEA, February, 1990)
TXPR67	Texas' Textbook Proclamation #67, 1990
TABS	Texas Assessment of Basic Skills test
TEAMS	Texas Educational Assessment of Minimum Skills
TAASM	Texas Assessment of Academic Skills, Mathematics Objectives and Measurement Specifications 1990-1995
TAASR	Texas Assessment of Academic Skills-Student Performance Results, October 1990
EXCET	Texas Examination for the Certification of Educators in Texas
TXIDS	Texas Initial Discussions of the Standard Setting Process for the Texas Assessment of Academic Skills (TAAS) Program, no date
HB246	Texas House Bill 246
TXTTAS	Texas Teacher Appraisal System Booklet
TXSTE	Texas 1987 Standards for Teacher Education
TXEXCETM	Texas EXCET in Mathematics for High School (Mathematics 17)
TXAPPMAN	Texas Teacher Appraiser's Manual (1989-1990)
TXACCR	Texas Data Collection and Summary Guide (1989-1990), Division of Accreditation, TEA
TXCPL	Texas compliance document to a school district
TXCPL2	Texas compliance document to a second school district
TXPROCL65	Texas textbook proclamation #65.
Chapter 67	19 TAC, Chapter 67, Subchapter A, Instructional Resources (April, 1991)

CONCLUSION

CONCLUDING REMARKS ON THE CASE STUDIES

At the beginning of these case studies I defined the strength of a curriculum policy as the extent to which teachers are likely to implement that policy. There are many curriculum-related policies: curriculum guidelines, student course requirements, student testing, school evaluation, teacher certification/staff development, instructional materials, and other state curriculum policies. At the beginning of this study, I argued that teachers may be more likely to implement curriculum control policies that are prescriptive, consistent, authoritative and powerful. These four characteristics describe curriculum systems in terms of strength and control.

In collecting data, I found an additional way to characterize state curriculum policies: whether they challenge existing practice. Where states' curriculum policies challenge existing practice the most, the more difficult it may be to convince teachers to adopt new policies. On the other hand, when state policies codify existing practice, teachers are already implementing state policies and no adjustments may be needed.

Therefore, teachers may be more likely to implement curriculum policies that are strong, i.e., prescriptive, consistent, authoritative and powerful, and tend not to challenge existing practice. The following section describes similarities and differences among the four states' curriculum policies with respect to each of the five characteristics.

I. Consistency

All of the states studied seem to share strong across-policy consistency. Texas and California are probably most consistent of the four states. Both Texas and California build other curriculum control policies around the curriculum guidelines. But, in New York and Florida, school evaluation, teacher certification, and inservice policies are relatively independent of the curriculum guidelines: they are not built on the curriculum guidelines.

Each state seems to build consistency around different policy instruments. Texas builds its school evaluation, student testing, and textbook selection policies around its minimum competency "essential elements." California constructs its school evaluation, testing, staff development, instructional materials and other policies around its curriculum guidelines. New York builds its other policies around the curriculum-testing link. Florida builds its other curriculum policies around its minimum competency tests.

The fact that states appear to build consistency around policies or policy clusters suggests the possibilities for further analysis. Do states' lead policies or policy clusters reflect underlying implicit orientations toward policy formulation? Are some lead policies incompatible with some types of policy formulations? Are state policies built

around curriculum guidelines more likely to be implemented than those built around other lead policies? These questions suggest that further investigation of lead policies may be useful.

Table 1 summarizes the finds of this study regarding cross-policy consistency. All states have moderate to high levels of cross-policy consistency, resulting in high strength in this curriculum control area.

Table 1-Consistency across states' curriculum control policies

Policy	New York	California	Florida	Texas
Curriculum Guidelines	high	high	high	high
Course Requirements	high	moderate	low	high
Student Tests	high	high	high	high
School Evaluation	low	high	moderate	high
Teacher Certification/Staff Development	none	low	low	moderate
Instructional Materials	none	low	high	high
Informational System	moderate	high	low	low
Overall	low	high	low	high

II. Prescriptiveness

For simplicity, I will limit my discussion of prescriptiveness to the curriculum guidelines in each of the four states. New York's and California's curriculum guidelines seem most prescriptive of the four states in our study. New York's syllabi offer extensive subject and course guidance. Unlike the other states, New York offers unit-specific guidance on teaching processes and subject content for every course required for graduation. California's curriculum guidelines are extensive and specific in different ways. California guidelines present a coherent vision for subject areas (e.g., mathematics

and social studies). They also discuss the scope, sequence, teaching processes, instructional materials and content for the entire K-12 program. Yet, California guidelines lack prescriptiveness at the unit level. Neither Texas' nor Florida's guidelines match the breadth or specificity of New York's and California's.

New York's curriculum guidelines contain over-arching subject area rationales, scope and sequence. But they also include syllabi. These syllabi contain general and more specific learning objectives and possible teaching methods for each unit of each required course. New York tests every student's knowledge of these course syllabi: they require that students pass either a basic (competency) or more advanced (Regents comprehensive) test for each course.

California guidelines present a subject-specific rationale, set of objectives, general advice about teaching and materials, and a clear scope and sequence across the K-12 grades. The history-social science framework, for example, even prescribes the teaching of particular interpretations of history, selecting textbooks with particular characteristics, and the teaching of particular periods of history at different ages. However, in comparison to New York's course and unit specific guidelines, California's K-12 frameworks lack specificity. For example, California guidelines prescribe the integration of literature into the teaching of history, but they provide little information or advice about how to use literature in the context of a high school history course and very few suggestions about what sort of literature might be appropriate for what purposes.

Florida's and Texas' curriculum guidelines are extensive though less specific than New York's and California's. For example, Florida's curriculum guidelines specify goals and behavioral objectives for a variety of ability levels of social studies and mathematics courses that meet graduation requirements; however, the guidelines lack over-arching rationales and underlying principles for subject areas that one can find in both the New York and California guidelines. Also, Florida's and Texas' behavioral objectives for many courses contain ambiguous terms. Additionally, Florida's and Texas' curriculum guidelines promise competence in minimum skills or "essential elements," as Texas calls their basic skills curriculum criteria. Finally, both states' guidelines also lack unit organization, and scope and sequence information. Thus, in comparison to either California's or New York's, Texas' and Florida's guidelines are less prescriptive.

Table 2 summarizes the findings of this study regarding prescriptiveness. New York and Florida have moderate to high levels of prescriptiveness in their curriculum control policies. California and Texas showed more moderate levels of prescriptiveness. All states have medium or high levels of strength in this area.

Table 2-Prescriptiveness of state curriculum guidelines

Dimension of Prescriptiveness	New York	California	Florida	Texas
Overall goals or mission of subject curriculum	high	high	none	low
Course Objectives	high	low	high	none
Invariate course sequences	high	low	none	none
Unit objectives	high	none	none	none
Lesson structure & objectives	none	none	none	none
Lesson sequencing	none	none	none	none
Exemplary activities & teaching methods	moderate	low	none	none
Materials specified	none	low	moderate	moderate
Overall	high	moderate	low	low

III. Authority

New York's, Florida's and Texas' curriculum control policies may be more authoritative than those of California. Because they appeal to more bases of authority and do so more explicitly than all of the states, New York's curriculum control policies seem to be most authoritative; they are backed with the authority of high stakes tests. Texas appeals mainly to expertise and law. Florida's curriculum control policies appeal mainly to legal authority. California's curriculum control policies appeal mainly to expertise.

New York's curriculum policies explicitly appeal to more sources of authority than other states. Underlying all curriculum policies are both the legal and traditional authority of the New York Regents to prescribe curriculum standards and assess their effectiveness. Since New York curriculum guidelines involve the advice and consent of state, local and national curriculum teachers, professors and consultants, curriculum guidelines also appeal to the authority of expertise. The curriculum syllabi explicitly identify these bases for authority in the introductory pages. For example, the U.S.

History syllabus describes the Regents curriculum goals, how the social studies program goals match those, and then how the syllabus goals form an important element of the social studies program goals. Also, the beginning of the document lists state and nationally-prominent individuals responsible for the creation of the syllabus. Further, it identifies the steps the state took at particular times to insure that the syllabus was teachable in actual schools. New York curriculum documents are very clear that curriculum policy authority is based on the Regents approval, and national and state expertise. Thus, the control policies appeal to the traditional authority of the Regents, and the knowledge and skills of experts.

Texas' curriculum control policies appeal mainly to the authority of law; but they also appeal to expertise. Texas educational law and regulations authorize the state curriculum, teachers' adherence to the curriculum, and textbook selection according to the curriculum, and student tests based on the curriculum required for graduation. Texas seeks the advice of mainly subject supervisors, and to a lesser extent, state teachers and administrators on its curriculum guidelines, its testing and its textbook requirements. Texas' curriculum documents are less clear than New York's about who gives advice, how advice is given, and with what effect. However, Texas state curriculum consultants often seek the advice of state supervisors, administrators at annual meetings, and through policy pre-approval hearings. The Texas mathematics and social studies guidelines also appeal to the expertise of national subject organizations. The social studies guidelines refer to National Council for the Social Studies standards, and mathematics guidelines refer to National Council of Teachers of Mathematics standards.

Florida's and California's curriculum control policies appeal to fewer sources of authority less explicitly than New York's and Texas'. Florida's lack appeal to national expertise. In doing so, they imply appeals to either traditional or normative authority. The most important basis for the authority of Florida curriculum policies is that of the State Legislature. Since the curriculum guidelines list no experts of any sort, the guidelines are not presented to teachers or the general public as the product of experts, as are California's, Texas' and New York's. The curriculum guides are written by state officials, not curriculum experts known outside of the state. California's curriculum control policies lack appeal to legal, traditional and normative authority. California's policies are most often justified by reference to the expertise of nationally prominent research studies, and national subject organizations, or the writing of nationally-recognized subject experts.

In comparison to either Texas' or New York's, Florida's and California's curriculum policies seem less authoritative. Since Florida appeals less to the expertise of either state or national curriculum experts, curriculum control policies may lack authority in the eyes of teachers, professors and administrators. The authority of California curriculum policies may be compromised by at least two factors: the authority conflicts between different curriculum guidelines; and the extent to which California mathematics and social studies curriculum guidelines depart from common and traditional practice.

These are most evident in social studies, renamed and re-conceptualized as history-social science. One such conflict seems to be whether the legally-authoritative model curriculum standards or the SDE's curriculum frameworks represent the actual state curriculum guidelines. There are major differences between the model curriculum standards and frameworks in History-Social Science. In addition, the Frameworks present a vision of mathematics and social studies that departs substantially from common and traditional curriculum practice in the nation at large. For example, the mathematics framework proposes teaching the same mathematical concepts to all students. Furthermore, the history-social science framework places history at the center of the social studies program, with the social sciences in a vague supporting role. Major revisions like these appeal less to traditional, legislative or regulatory authority, and rely more on the expertise of the authors of the curriculum frameworks, and the charismatic authority of these individuals and the State Superintendent of Public Instruction.

Appealing to authority does not give states authority. Authority implies understanding and acceptance by subordinates. Whether appeals are effective or not may depend on one additional factor: the extent to which teachers and administrators understand and accept state appeals. Appeals to authority are effective inasmuch as they are accepted by those to whom such appeals are addressed. New York's and California's extensive appeals to expertise, administrators and teachers may not believe the experts believable. Furthermore, some kinds of authority may be more effective in some states more than others. For example, appeals to tradition may be most effective in a state with a longer tradition of state involvement in curriculum control. Thus, while I can show that new York appeals more explicitly to more sources of authority, I would not argue that teachers or administrators accept or understand those appeals better than California's appeals to expertise. More data on how teachers and administrators perceive state appeals to authority is needed.

Table 3 summarizes the finds of this study regarding authoritativeness of the states' curriculum control policies. New York, Florida, and Texas have moderate to high levels of authority in their curriculum control policies. California showed only moderate levels of authority.

Table 3-State curriculum control policy authority sources

Policy	New York	California	Florida	Texas
Curriculum Guidelines	tradition (e) expertise (e) norms (i) law (e)	expertise (e, m) charisma (i) law (m)	law (e) norms (i)	law (e) expertise (e, i)
Course Requirements	tradition (e) norms (i) law (e)	law (e)	law (e)	law (e)
Student Tests	tradition (e) expertise (e) norms (i) law (e)	law (e) expertise (e)	law (e) expertise (i)	law (e) expertise (i)
School Evaluation	tradition (e) law (e)	law (e) expertise (e)	law (e)	law (e)
Teacher Certification/Staff Development	law (e)*	law (e)*	law (e)	law (e)
Instructional Materials	norms (i)	norms (i) expertise (e)	law (e) norms (i)	law (e) norms (i)
Informational System	expertise (e) law (e)	law (e)	law (e)	law (e)
Overall	high	low	moderate	moderate

e=authority explicitly stated in documents or interviews
i-authority implicit in policies or implementation of policies
m=documents or interviews show mixed or inconsistent authority appeals
*=authority given mainly to higher education institutions

IV. Power

New York's, Florida's and Texas' curriculum control policies may be more powerful than those of California. Texas uses strong regulatory sanctions. Florida uses sanctions in its testing, teacher certification, and school evaluation policies; it also employs rewards to encourage school districts to adopt state-approved textbooks. California's curriculum control policies lack the sanctioning power built into the other

states' control policies; California relies mainly on rewards to induce local compliance with state policies.

Of the four states, Texas and New York appear to use the most powerful sanctioning mechanisms across more policies than the other two states. California uses more reward mechanisms than other states, though the state's ability to fund these rewards has varied considerably over the last ten years. The state legislature has created several reward-based programs from which it has withdrawn or reduced funding. Also, California's lack of effective sanctions may also undermine the local adoption of state programs.

Texas builds more sanctions into more curriculum control policies than any of the other states in this study. By law, schools must offer the state curriculum, teachers must teach that curriculum, and students must pass a test based on that curriculum in order to graduate. The state monitors all of these things through state testing and school evaluation policies. Should schools fail to offer the curriculum or if their teachers are not planning lessons, teaching and evaluating students on the basis of the curriculum, the state can intervene directly in the operation of the school. The state can assign individuals to oversee their operations and to insure compliance with state mandates to teach the curriculum. Schools can lose their accreditation and ability to operate if they fail to comply. Texas public schools can use only one of the three state-approved textbooks; failure to use state-approved textbooks violates state law.

Like Texas, New York backs its already authoritative curriculum policies with sanctions. Students must pass syllabus-based tests to graduate. Also, schools must meet minimum standards on test performance or they will be monitored more closely, and may be cited publicly for lower test score performances. New York is the only one of our states that publishes a state ranking of schools and distributes it to the major newspapers. Unlike Florida or California, New York can require that low-performing schools receive state help, administrative and curriculum guidance. Furthermore, if schools fail to improve, New York can take them over. New York is now beginning to reward higher-performing schools by choosing them as models for other schools, assuring them positive publicity. New York's curriculum system uses relatively strong sanctions, and is beginning to consider a wider use of rewards.

Both sanctions and rewards are common to Florida's basic skills-oriented curriculum control policies. Students cannot graduate without passing minimum competency tests that are based directly on state basic skills curriculum guides. Textbooks cannot be adopted if they do not address the basic skills standards in the curriculum. Also, schools receive more state financial help to purchase textbooks that match the requirements of the curriculum guidelines.

However, these sanctions and rewards apply less to policies that concern the entire state curriculum. Florida offers no rewards or sanctions for teachers to teach or students to learn the part of the state curriculum that goes beyond basic skills. For

several years Florida has required that students pass tests of basic reading, writing and mathematics content and skills. But only this year has Florida added tests of student knowledge beyond the competency level. By contrast, New York has traditionally focused its most prescriptive and authoritative curriculum and tests at the college-bound. Only within the last six years has New York developed testing standards for the non-college bound. The two-track system in New York persists with rewards and sanctions for different levels of student accomplishment. For example, New York offers students higher status diplomas if they take higher levels of required courses, and pass higher level examinations in those courses. The non-college-bound receive only a standard diploma, based on their successful completion of basic course requirements and their passing of competency tests.

In contrast to the other three states, the California curriculum control policies lack sanctioning power. First, the California State Legislature prohibits the imposition of a state curriculum on local schools. Second, California does not sanction schools, teachers or students for not following the curriculum. California requires only that districts review their curriculum in light of the state guidelines (SDE interprets this as in light of state "frameworks"). Though California tests or will test student knowledge of both mathematics and social studies frameworks annually (unlike Florida), the tests have no direct consequences for students or teachers; CAP tests have minimal stakes for schools, students or teachers. Neither school nor student future outcomes depend on whether students do well or poorly on California's achievement test for all seniors on the CAP tests. While California, like New York, publishes school performance reports for each public school, it does not officially identify the lowest performing schools publicly (as does New York).

California's control of curriculum depends mainly on school cooperation. California uses rewards rather than sanctions for leverage. Through the school improvement and staff development programs, California uses financial incentives for districts that appear to adopt state curriculum standards. Also, recently California has begun rewarding the highest 15 percent of CAP-scoring schools annually in a public ceremony. However, the reward structure in California may be compromised by the lack of consistent state financial support. The state legislature has created many reward-based programs and withdrawn funds from the programs later. The programs remain after the rewards disappear. The lack of sanctions and the tendency of the legislature to de-fund or reduce funding to reward-based programs tends to make California's control of curriculum less powerful than New York's or Texas' controls.

Table 4 summarizes the findings of this study regarding the power of the states' curriculum control policies. Only Texas has high levels of power associated with its curriculum control policies. New York, California, and Florida showed only low to moderate levels of power.

Table 4-State curriculum control policy power
(*applies only to basic skills guidelines)

Policy	New York	California	Florida	Texas
Curriculum Guidelines	high (s)	none	moderate (s)*	high (s)
Course Requirements	high (s)	high (s)	low (s)	high (s)
Student Tests	high (s)	low (r)	high (s)*	high (s)*
School Evaluation	high (s)	low (r)	low (s)	high (s)
Teacher Certification/Staff Development	low (s)	low (r)	moderate (s)	high (s)
Instructional Materials	none	none	high (r)	high (s)
Informational System	low	none	none	none
Overall	high	low	moderate	high

*=authority given mainly to higher education institutions
s=sanctioning power
r=reward power

V. Challenges to Existing Practice

States that challenge practice more may find that teachers and administrators have trouble implementing them. There may be greater initial resistance or lack of knowledge about what should be done to implement the policy. The most challenging policies may disrupt established patterns of relationships between institutions, and between people and the institutions in which they work. In addition, policies may question the authority of existing content, teaching or administrative practices, or programs. Such challenges are not likely to meet with sympathy from the staffs in today's public high schools, or from those who supply them with curriculum materials.

Of the four states, California seems to challenge existing practice the most. Florida challenges existing practice the least. New York and Texas both have a mixture

of policies: some that challenge existing practice and others that codify traditional or existing practice.

California is the only state to prescribe curriculum guidelines and tests in both mathematics and social studies that probably require major revisions of what is taught and how it is taught. For example, California mathematics guidelines and student testing criteria prescribe that all students learn mathematical concepts, non-routine problem-solving of mathematical problems, and probability and statistics. The social studies guidelines (and presumably the future student tests) abandon notions commonly guiding social studies and place the study of history at the center and the curriculum emphasizes teaching history as an engaging chronological story.

California's school evaluation policies also break with the traditional and standard mode of evaluating high schools. For many years, the only school evaluation of high schools was conducted by a regional independent group of educators. According to state officials, the evaluation was infrequent, very general, and not necessarily related to state curriculum goals. In the last few years California has encouraged schools to use a new and extensive state-developed evaluation program. The state program assesses both the effectiveness of the school as an organization and the extent to which its curriculum program reflects the state curriculum guides.

State-financed staff development radically changes California's previous practice of funding a wide variety of disconnected staff development programs at the state, regional and local levels that were not necessarily related to the state curriculum. The new staff development program restructures state-financed staff development programs so that all staff development programs at the local level are linked to regional and statewide assistance and reflect emphasis on teacher and school implementation of the new curriculum guides. Thus, in the last five years, California has changed its curriculum, testing, school evaluation, and staff development programs dramatically to challenge existing practice.

New York and Texas have modified major aspects of existing practice but left other aspects largely untouched. For example, both New York and Texas have recently modified their mathematics curriculum to an NCTM-like structure. Both of their mathematics curriculum guidelines, like those of California, stress students' learning to solve non-routine problems, probability and statistics, and a strong emphasis on learning key concepts (rather than just mathematical operations or formulas). However, New York does not challenge the existing practice of offering higher-order content and skills to the college-bound and offering basic skills to the non-college-bound. New York offers its NCTM-like curriculum only to the college-bound. To other students it offers a traditional focus on mathematical operations, formulas, and routine problem-solving. The college-bound must pass a test on the new mathematics, but the non-college-bound must pass a test on general mathematics. New York's promotion of NCTM-like mathematics guidelines and testing challenges practice but only for the teaching of a minority of higher-achieving students.

Texas curriculum control policies also partly affirm and partly challenge existing practice. For example, according to one state official, the social studies program has not changed markedly in the past several decades. Texas' new mathematics guidelines appear to challenge existing mathematics content and teaching methods. For instance, Texas prescribes one NCTM-like mathematics program for all students. Yet Texas appears not to test students' understanding of key aspects of the most challenging aspects of the curriculum: problem-solving of non-routine problems, the use of calculators, or probability and statistics. Other curriculum control policies are similarly mixed in terms of challenging practice.

Florida challenges existing practice the least of the four states in our study. Unlike Texas, California, and New York, Florida has chosen to codify a wide range of existing high school mathematics courses rather than promoting a new vision of mathematics instruction. Instead of stressing higher levels of cognitive development for all students, Florida has codified a tracked curriculum in both mathematics and social studies. Florida's school evaluation system does not assess the extent to which teachers follow the state curriculum. But it does require that all districts adopt the state curriculum objectives for every required course. This tends to reaffirm the authority of existing practice.

VI. Conclusion

In terms of the potential for teachers to implement state policy, New York's curriculum policies seem most likely to be implemented by teachers. The policies are very prescriptive, authoritative, and powerful. Texas and California come next, each sharing some but not other policy strengths. All four states described in this research seem to share a fairly high level of cross-policy consistency.

Despite the fact that New York does not require that districts or schools adopt the state curriculum guides (Florida and Texas do), New York's curriculum policies seem likely to be implemented by teachers. Every required course in the curriculum has a set of unit plans that are matched to tests students must pass in order to graduate. The New York curriculum guidelines appeal to multiple forms of authority, and this authority is backed by the power of the state tests. These guidelines prescribe curriculum in sufficient detail that teachers are more likely to understand how to apply the curriculum in the classroom. Though authoritative, powerful and highly consistent, Texas' curriculum policies seem to lack the level of prescriptiveness common to New York's policies. Florida's curriculum policies are less authoritative and powerful than New York's, despite their basis in state law. California curriculum policies in mathematics and History/Social Science, when taken together, remain less powerful and authoritative than New York's and Texas'. But California's curriculum-specific cross-policy consistency is a major strength unmatched by the other two states.

Teachers may be more likely to implement provisions of state curriculum control policies when such policies are prescriptive, consistent, authoritative, powerful and challenge existing practice the least. Of course, more data on how prescriptive, consistent, authoritative, powerful and challenging state curriculum control policies appear to teachers is needed prior to concluding that such policies are strong. Based on this analysis of state curriculum control policies, I hypothesize that, other things being equal, school staff in New York may be somewhat more likely than staff in Texas, Florida and California schools to implement their respective state's curriculum policies.

Table 5 summarizes the findings of this study regarding the overall strength of the various curriculum control policies analyzed. Texas and Florida showed the greatest levels of overall curriculum control strength. New York's curriculum control policies are also relatively strong. The weakest state identified, in terms of curriculum control policies, is California.

Table 5-A summary of the potential of policies to limit school and teacher discretion

Policy	New York	California	Florida	Texas
Curriculum Guidelines	high	moderate	low *	moderate *
Course Requirements	high	moderate	low	moderate
Student Tests	high	moderate	moderate *	moderate *
School Evaluation	low	high	moderate	high
Teacher Certification/Staff Development	low	none	low	moderate
Instructional Materials	none	low	moderate	moderate
Informational System	low	low	low	low
Overall	moderate	low	low	moderate

*mainly with respect to basic skills

placed on lowered status. Such schools may receive a warning. Rapid compliance usually follows such warnings. Of the 50, only 15-20 might still remain on such status into the next year. The TEA can exert direct power over a school. It can require that the school seek assistance. There are eight accreditation personnel who devote a majority of their time to assisting schools on lowered status obtain compliance. It can also assign a monitor or a master to the school, and make the school pay the expenses of the monitor (as much as $200 a day). Monitors and masters are former school superintendents hired by TEA to supervise the operations of the school until compliance is met. The legislature is now working on a bill whereby the state can directly fire the superintendent and hire a new one.

The reports and requirements generated by accreditation visits are lengthy (80-300 pages, depending on the violations and size of the district) and can be powerful. First, site evaluators meet with district officials and at least one school board member to explain and discuss the findings. Second, a copy of the report goes to all board members. Following the distribution of the report to the school board, the community often learns quickly about the major results. Because of the visibility of the findings, the poor school evaluations can lead to the firing of superintendents (Respondent 4).

Reports are powerful in that they require the district and TEA staff to establish compliance dates and the reports specify what must be done. In the following example, TEA evaluators prescribe curriculum improvements:

> Action required - Because of the lack of progress in the development of curriculum guides, the district has not satisfied this corrective/improvement action. Therefore, the district must submit to the Division of Accreditation a new plan for the development of curriculum guides. The plan must include the assignment of specific supervisory personnel to monitor the progress made by each teacher in developing these documents. Curriculum guides are to contain the objective of the lesson, the essential elements being addressed, the resources to be used to teach the lesson, the activities to be used, and the evaluation techniques. Remediation and enrichment activities should be included for each lesson. They should contain the same components necessary for large group instruction.
> CORRECTIVE/IMPROVEMENT ACTION IS REQUIRED
> (TXACCRREP2, p. 2).

The ability of Texas to require compliance on the level of the individual teacher's curriculum guides indicates the potential power of the state evaluation system. No other state specifies compliance with state curriculum guides at the level of teaching plans.

5. Teacher Certification/Development Policies

All of the teacher development programs are based on legislation or TEA regulations and are backed by sanctions. Teachers failing the certification exams cannot teach; educational institutions failing to meet TEA standards cannot offer teacher education programs; and inservice providers cannot provide inservice unless they comply with state standards.

6. Instructional Materials Policy

The Texas legislature and TEA rules legally authorize Texas textbook adoption policies. Chapter 12 of the Texas Education code calls for state adoption of textbooks. Textbook policies have the power of sanction. Unlike all other states studied, schools are not permitted to use textbooks outside of those adopted by the state. Neither California nor New York approve textbooks for high schools. Florida rewards all schools who use state-approved textbooks. But, with the exception of waivers, Texas requires the use of state-adopted texts.

IV. CONCLUSIONS

Texas curriculum guidelines, its essential elements and sub-elements, are extensive but lack specificity. Thus, they reflect a lack of prescriptiveness. The guidelines match other major curriculum control policies. The guidelines appeal to legal and expert authority, but only social studies guidelines appeal to normative and traditional authority. Texas undergirds the legal authority of the guidelines through its ability to prevent teachers from teaching, students from graduating, textbooks from being adopted and schools from being accredited. Therefore, the curriculum guidelines seem to possess a good deal of potential strength as control policies. But, compared to New York and California, the guidelines lack specificity at the level of instructional planning and delivery.

Course graduation requirements in Texas are legally authoritative and powerful. But they lack prescriptiveness and consistency with other guidelines. With the exception of New York's course requirements, Texas graduation standards are similar to those of other states.

Texas requires that all high school students pass an exit test in reading, writing and mathematics. Based on authority of law and expertise and the power to withhold graduation, the state exit test contributes to the strength of the curriculum control system. Because of its linkages with the essential elements in mathematics, the exit test is connected with school accreditation system and the textbook adoption system. However, teaching staff certification and career ladder policies are not linked to the testing system. Because of its links with the essential elements and its high stakes nature, the student testing system increases the likelihood that mathematics teachers (and, in time, social

studies and science teachers) will teach the essential elements on which it is based.

The Texas Education Agency evaluates the extent to which schools and districts comply with state educational law. The accreditation system is highly prescriptive, consistent with other curriculum control systems, authoritative and powerful. Unlike New York or Florida but like California, Texas uses the school evaluation system to reinforce school-wide use of the state curriculum guides. Unlike California but like New York and Florida, Texas' school evaluation system is developed and controlled at the state level. The most striking aspect of the Texas school evaluation system is its ability to require a detailed implementation of educational regulations, including curriculum-related regulations.

Texas attempts to control teacher education, certification, evaluation and inservice. Such policies are prescriptive, legally authoritative and powerful. However, with few exceptions, most teacher policies lack direct connection with the other policies, especially with essential elements. This inconsistency reduces the utility of teacher development policies as curriculum policies.

Texas textbook policies are highly prescriptive, consistent with other major curriculum control policies, authoritative, and powerful. These policies are important in their own right. They also reinforce Texas' tendency to base curriculum control on the essential elements, the main source of curriculum guidelines.

These findings are summarized in Table 3. Generally, the policy areas studied are moderately consistent with each other. Overall, Texas' curriculum control policies tend to exhibit moderate to high levels of prescriptiveness, authority, and power. Thus, Texas has a strong curriculum control system.

Table 3-Overall policy strength of Texas curriculum control policies

Policy	Consistent	Prescriptive	Authority	Power
Curriculum Guidelines	high	low	law (e) expertise (e, i)	high (s)
Course Requirements	moderate	low	law (e)	high (s)
Student Tests	moderate	moderate	law (e) expertise (i)	high (s)
School Evaluation	high	high	law (e)	high (s)
Teacher Certification/Staff Development	moderate	moderate	law (e)	high (s)
Instructional Materials	moderate	moderate	law (e) norms (i)	high (s)
Informational System	N/A*	N/A*	N/A*	N/A*
Overall	high	moderate	moderate	high

e=authority explicitly stated in documents or interviews
i=authority implicit in policies or implementation of policies
*=each part of the TEA keeps its own information; there is no agency that corresponds to either CBEDS (California), ICE (New York) or MIS (Florida).
s=sanctioning power
r=reward power

ABBREVIATIONS-TEXAS CASE STUDY

TXMFRM86	Texas' Mathematics Framework for 1986
TXCH75	Texas' Chapter 75
TEA	Texas Education Agency
TXSSFRM	Texas' Social Studies Framework for 1986
TXSTART	"Starting Today: A Guide to Improving Mathematics Programs for the 1990s" (Discussion Draft from the TEA, February, 1990)
TXPR67	Texas' Textbook Proclamation #67, 1990
TABS	Texas Assessment of Basic Skills test
TEAMS	Texas Educational Assessment of Minimum Skills
TAASM	Texas Assessment of Academic Skills, Mathematics Objectives and Measurement Specifications 1990-1995
TAASR	Texas Assessment of Academic Skills-Student Performance Results, October 1990
EXCET	Texas Examination for the Certification of Educators in Texas
TXIDS	Texas Initial Discussions of the Standard Setting Process for the Texas Assessment of Academic Skills (TAAS) Program, no date
HB246	Texas House Bill 246
TXTTAS	Texas Teacher Appraisal System Booklet
TXSTE	Texas 1987 Standards for Teacher Education
TXEXCETM	Texas EXCET in Mathematics for High School (Mathematics 17)
TXAPPMAN	Texas Teacher Appraiser's Manual (1989-1990)
TXACCR	Texas Data Collection and Summary Guide (1989-1990), Division of Accreditation, TEA
TXCPL	Texas compliance document to a school district
TXCPL2	Texas compliance document to a second school district
TXPROCL65	Texas textbook proclamation #65.
Chapter 67	19 TAC, Chapter 67, Subchapter A, Instructional Resources (April, 1991)

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